THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Alabama Oil Men's Association, Tutwiler Hotel, Birmingham, Ala., Nov. 21.

Nebraska Independent Oil Men's Association, Paxton Hotel, Omaha, Dec. 2, 4.

Indiana Petroleum Association, Hotel Severin, Indianapolis, Ind., Dec. 4, 5.

Tennessee Oil Men's Association, Farragut Hotel, Knoxville, Tenn., Dec. 15, 16.

Minnesota Division, Northwest Petroleum Association, Radisson Hotel, Minneapolis, Jan. 14, 15.

North Dakota Division, Northwest Petroleum Association, Dacotah Hotel, Grand Forks, N. D., Jan. 29, 30.

Ohio Petroleum Marketers Association, Neil House, Columbus, O., Feb. 24, 25, 26.

American Association of Petroleum Geologists, Gunter Hotel, San Antonio, Texas, March 19, 20 and 21, 1931.

NATIONAL PETROLEUM NEWS

Vol. 22 No. 47

Published by

The National Petroleum Publishing Co.
1213 W. Third St., Cleveland, O.

Tel. CHerry 7672

Branch Offices:

Tulsa, 904 World Bldg., Tel. 3-7132.
New York, 342 Madison Ave., Tel. Vanderbilt 3951.
Houston, 2420 Gulf Bldg., Tel. Fairfax 6286.
Chicago, 35 E. Wacker Drive, Tel. State 4141.

Subscription rate $3.50 per year, U. S., Mexico and Canada; $5 Foreign countries. Current copies 10 cents; for back issues more than two months old 25 cents per copy.

All contents copyrighted, 1930, Trade Mark Registered U. S. Patent Office.

Member Audit Bureau of Circulations and Associated Business Papers.

General

Hold Winter Gasoline Output to Demand, Refiners Are Advised 19
Three Proposals Given A. P. I. Board to Remedy Abuses Under Code..... 24
Bargains—Not Duty to Buy—Will Stimulate Business Activity..... 28
Supreme Court Test of Nation-wide Curtailment Is Suggested..... 29
Institute to Prepare Manual Covering Fire Protection..... 30
A. P. I. Report of Refinery Operations, Week Ended Nov. 15..... 31
Review of Late Production News 32
Blakeslee to Head New Safety Division of Institute..... 33
New Code Provides Standards for Handling of Crude..... 40
Seven New Completions Add to Growing Output of Long Beach Field..... 45
Gasoline Well Extends Oklahoma City Pool Farther Into City..... 47
U. S. Crude Production by Fields, Week Ended Nov. 15..... 73

Merchandising

Tires—Facts the Oil Marketer Should Know Before He Takes On This New Line 63
Automotive Route Studies Cut Oil Delivery Costs—*by Eugene Power* 68

Engineering

Standard Anti-Knock Test Method Nears Completion Stage..... 34
Year's Progress in Production Practice Due to Better Utilization..... 39
Theory and Practice of Unitization 41
Recent Methods of Utilizing Waste Refinery Fuels—Part 2—*by L. A. Mekler* 51

Markets

Chicago Market Featureless; Prices Steady..... 77
Mid-Continent, Neutral Oils, Bright Stock Quoted Lower 79
Refinery Price Tables 80, 82, 83
California, Retail Price Cutting Unsettles Market 86
Pennsylvania, Kerosine Up 0.125-Cent 87
Eastern, Gasoline Prices Continue Downward Trend..... 88
Gulf, Competition Sends Bulk Prices Down..... 88
Wax, Foreign Buyers Active 89
Complete Seaboard Prices 90
Tank Wagon Price Tables 92, 93
Aviation Gasoline Price Tables 95, 97
Crude Oil Prices, All Fields 99, 101

Departments

The Editors' Viewpoint..... 21
The Mid-Continent Skyline..... 48
New Refining Patents 61
Oil Company Finance.....98, 100, 102
N. P. N. Service Record 101

Dubois Studio

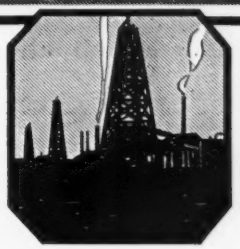
ROBERT R. PENN of Dallas, just elected vice president of the American Petroleum Institute and chairman of the Division of Production, took leadership in Texas curtailment activities recently as head of the state's Central Prorating Committee.

He was previously vigorous in earlier curtailment work. He is president of the Penn Oil Co., an Independent producing firm.

His early success as a producer was in the Mexia-Powell development of East Texas. More recently he has been an outstanding operator in the Permian salt basin region of West Texas. He is a native of Texas and at one time was part owner of a Wichita Falls newspaper.

NATIONAL PETROLEUM NEWS

Published at
1213 W. Third St.
Cleveland



Branch Offices
Tulsa, New York, Houston, Chicago

Vol. 22 **CLEVELAND, November 19** **No. 47**

Hold Winter Gasoline Output to Demand Refiners Are Advised

CHICAGO, Nov. 14

AN EMERGENCY operating plan for the refining industry to April 1 next was endorsed by directors of the American Petroleum Institute at the general institute meeting here this week.

This plan, national in scope, calls upon refineries to hold gasoline stocks as of April 1 to 40,000,000 barrels. At present they are around 38,000,000 barrels.

Last spring refineries started their season of heaviest demand with stocks built up to a top-heavy 55,000,000 barrels. With that demand lighter than anticipated, due to general business conditions, this accumulation helped bring about the present over production of gasoline, referred to in discussions as an "emergency."

In reality, the refinery operating plan is a part of the general voluntary curtailment program of the industry, upon which much progress has been made the past year.

A year ago producers in flush fields were being urged to hold back production to current market demand. That having been accomplished in good part, refiners are now being told to refrain from calling upon producers for more crude to manufacture into gasoline than is needed for current consumption.

The program discussed by institute directors at Chicago is based on the two surveys of gasoline supply and demand for the period from Oct. 1 to April 1 next, which were publicly presented at an open meeting in Chicago Nov. 10 under the auspices of the institute. One was the report of the Committee on Petroleum Economics of the Federal Oil Conservation Board. The other was a report of the Special Committee on the Economic situation of the institute.

The two reports concurred in the main and they were referred to the individual refining executives of the country for their consideration and resulting action. Their conclusions were as follows:

MANUFACTURE of gasoline must be reduced by eight per cent below the October level if the desired figure of 40,000,000 barrels of gasoline in stocks by April 1 is to be attained.

Demand for crude to make the desired volume of gasoline will amount to 2,270,000 barrels daily average over the six-months' period under consideration. Present domestic production is about 2,297,000 barrels and estimated crude oil imports over the six-months' period are estimated at about 159,000 barrels daily average.

To meet the 40,000,000-barrel gasoline stock figure on April 1 total domestic output of gasoline would be around 199,000,000 barrels for the six months and imports of gasoline are estimated at better than 9,000,000 barrels for the period.

The above conclusions are based on an increase in demand of 1.2 per cent above the corresponding period a year ago and are also based on no changes in crude oil stocks, either additions or withdrawals.

THE federal oil board's committee recognized the need for reductions in crude oil stocks now held by oil companies, but considered any relief plan for this winter as an emergency remedy rather than a permanent cure for the economic ills of the industry.

The principal point of difference in the two surveys was in total stocks on April 1 the refining industry should aim for. The federal oil board's committee took 45,000,000 barrels as the more practical gasoline inventory objective. "While

around 40,000,000 barrels appears a desirable inventory for next spring, the Committee has used 45,000,000 barrels because of the shortness of the intervening liquidating period and the difficulty of attaining the lower figure," said its report.

The institute committee on the economic situation, of which J. Edgar Pew, Sun Oil Co., was chairman, took 40,000,000 barrels as the mark to shoot for, basing this figure on estimates of necessary working stocks made by individual refining companies in reply to a questionnaire sent out by the committee.

"Our statistical subcommittee concluded that an aggregate refinery stock of gasoline on April 1, 1931, of 40,000,000 barrels would be adequate, economically and conveniently, to supply all gasoline demand during the succeeding summer," said its report. "This committee offers the same conclusion and wishes urgently to point out that a larger accumulation would be wasteful in every sense."

The oil board committee recognized the desirability of cutting stocks down to 40,000,000 barrels by making its suggestions to the individual refining companies flexible enough to cover a 40,000,000,-barrel stock figure on April 1, 45,000,000 barrels stocks and 50,000,000 barrels.

On the face of it a difference of 5,000,000 barrels in stocks to be reached at a date now not much over four months distant would make a considerable difference in the operating program of refineries. However, the discussion on both reports at institute meeting at Chicago brought out that any such operating suggestions for the entire refining industry must be revised in the light of gasoline demand at it actually develops and also in the light of the success of the industry in holding to the program during the early part of the period.

Some economists believed that demand would actually be less than during the early months of 1930 which will call for a further reduction in operating schedules. Also, it was pointed out the period under survey had already progressed over a month before the committee suggestions were brought to the industry's attention.

"For each month that elapses from Oct. 1 and additional curtailment of approximately 1 per cent will be required to compensate for the average factor." (The amount by which in

(*Continued on Page 22*)

Officers and Directors of the American Petroleum Institute Elected at Chicago to Serve Through 1931

President, E. B. Reeser,* Barnsdall Corp., Tulsa.

Vice-President at large, L. P. St. Clair,* Union Oil Co. of Calif., Los Angeles.

Vice-president for Production, Robert R. Penn, Penn Oil Co., Dallas.

Vice-President for Refining, R. C. Holmes, The Texas Co., New York.

Vice-President for Marketing, E. G. Seubert, Standard Oil Co. of Indiana, Chicago.

Executive vice-president, W. R. Boyd, Jr.,* New York.

Treasurer, A. L. Beaty,* New York.

Secretary and assistant treasurer, Lacey Walker,* New York.

Board of Directors

Production Group

L. P. St. Clair,* Union Oil Co. of Calif., Los Angeles.
Oscar Sutro,* Standard Oil Co. of Calif., San Francisco.
R. A. Broomfield, Barnsdall Corp., Los Angeles.
W. S. Farish,* Humble Oil & Refining Co., Houston.
Axtell J. Byles,* Tide Water-Associated Oil Co., New York.

Manufacturing Group

H. R. Gallagher,* Shell Co. of Calif., San Francisco.
Roy B. Jones,* Panhandle Producing & Refining Co., Wichita Falls.
Frank B. Fretter,* National Refining Co., Cleveland.
G. R. Nutty,* Gulf Refining Co., Pittsburgh.
W. E. Smith,* Standard Oil Co. of Ky., Louisville.

Distribution Group

K. R. Kingsbury,* Standard Oil Co. of Calif., San Francisco.
L. L. Marcell,* White Eagle Oil & Refining Corp., Kansas City.
Henry M. Dawes,* Pure Oil Co., Chicago.
E. W. Sinclair,* Sinclair Refining Co., New York.

Transportation Group

J. Howard Pew,* Sun Oil Co., Philadelphia.
C. H. Kountz,* Prairie Pipe Line Co., Independence, Kan.

Supply Group

John M. Crawford, Parkersburg Rig & Reel Co., Parkersburg, W. Va.

Foreign Trade Group

W. C. Teagle,* Standard Oil Co. of New Jersey, New York.

At Large Group

C. B. Ames,* The Texas Co., New York.
E. J. Bullock, Standard Oil Co. of Ind., Chicago.
Jacob France,* Mid-Continent Petroleum Corp., Tulsa.
Wirt Franklin,* Wirt Franklin Petroleum Corp., Oklahoma City.
S. A. Guiberson,* Guiberson Oil Investment Co., Los Angeles.
William F. Humphrey,* Associated Oil Co., San Francisco.
D. J. Moran,* Continental Oil Co., Ponca City, Okla.
W. G. Skelly,* Skelly Oil Co., Tulsa.
R. W. Stewart,* Chicago.
E. R. Brown,* Magnolia Petroleum Co., Dallas.
W. M. Keck,* Superior Oil Co., Los Angeles.
C. F. Meyer, Standard Oil Co. of New York, New York.
J. C. Van Eck,* Shell Union Oil Corp., New York.
George P. Whaley,* Vacuum Oil Co., New York.

Executive Committee

The executive committee will consist of the officers, E. W. Clark, Union Oil Co. of Calif., as last retired president, and J. Howard Pew, W. C. Teagle, Herbert L. Pratt, H. F. Sinclair, F. A. Leovy and W. S. Fitzpatrick.

*Re-elected

The Editors' Viewpoint

Moral Support for the Curtailment Plan

By V. B. Guthrie

N. P. N. MANAGING EDITOR

THE course of procedure open to the oil industry in formulating and carrying out a program of voluntary curtailment of gasoline manufacture, in the general interests of conservation and stability, it would seem has been considerably clarified through the meeting of the American Petroleum Institute in Chicago last week.

Clarified to an extent, in fact, that neither the industry nor outsiders should confuse the present national plan for holding down manufacture of gasoline to about current market needs over the winter with the plan launched early in 1929, which capsized on the rock of an apparent disapproval on the part of the federal authorities.

In the first place the present program is based on a concurrence of opinion from two sources as to the advisability, indeed the necessity, of curtailment in gasoline manufacture. One source is the industry's own committee of the institute which surveyed gasoline supply and demand for the period from Oct. 1 to April 1.

Of even greater importance, however, from the standpoint of any possible questioning of the oil industry's motives in carrying on such a curtailment program is the survey made and reported on at the institute meeting by the Committee on Petroleum Economics of the Federal Oil Conservation Board.

This report was made by men not actively connected with the direction of affairs in the oil industry. It was made at the behest of Secretary of the Interior Wilbur, chairman of the oil board. The report was passed on by Secretary Wilbur before it was made public. It points throughout to the necessity for a substantial reduction in the scale of refining operations.

The nature of the source of this report by no means gives the industry the approval of the oil board or any other governmental agency to go ahead with any curtailment plan it may see fit. The industry had its unfortunate experience in the spring of 1929 by which it learned the federal oil board is without authority to approve any move on the part of the oil industry. The board is a fact finding and advisory agency only.

It can logically be inferred, however, that the federal oil board, or at least its chairman, does consider as accurate statements of fact the statistics as to supply and demand in the report, which in themselves set forth the imperative need for a change in the scale of refinery operations. In endorsing the oil board committee's report the industry has accepted as sound a survey of the situation as it could have gotten, from the standpoint of protection of the public interests.

Of even greater importance in giving the industry moral support in its voluntary curtailment efforts, if such be necessary, are the remarks of Col. William B. Donovan, formerly assistant attorney general at Washington, before the open meeting of the institute at Chicago.

Col. Donovan had resigned his government position just prior to the time Attorney General Mitchell sent his ruling to the oil board on the industry's 1929 plan. During his period in office he handled oil matters, however. While his remarks in no sense can be construed as carrying the stamp of approval of the attorney general's office, they are probably as close to the government's point of view as an outsider can bring.

COL. DONOVAN says in effect an industry has never been found guilty of violation of the national anti-trust laws where its members concurred in an operating policy undertaken to save that industry from demoralization, and a policy in the interests of the public, even if prices were affected by that policy. "It was never intended by the Sherman law, nor by the courts' interpretation of that law that American industry should be compelled to proceed with a policy of competition that results in self-destruction," he stated.

"In discussing the legality of a plan to limit production, it is assumed that production will not be curtailed below even the approximate anticipated annual needs of the public," he said at another point in his address. "The legality of such a plan is dependent upon the existence of certain facts, such as production far in excess of normal and reasonable requirements, with resultant depression in price which threatens to destroy the investment in the industry, and the creation of excess stocks with economic waste and danger due to unnecessary stocks above ground."

Concerning the price factor Col. Donovan said at another point: "In periods of over production followed by depression in price, the consumer enjoys a temporary cheapness. But in such a situation curtailment must come and in-

dustry must choose between curtailment resulting from bankruptcy and failure, and orderly and intelligent limitation of production.

"The investments in the oil industry are enormous, and if they are to continue, there must be, as in every industry, a reasonable return upon the capital invested. It would seem to be in the public interest to maintain a stable production which will result at all times in a reasonable return upon the capital invested in the industry and prevent so far as practicable the needless waste of an essential national resource.

"If such an agreement were made in good faith for the purpose of maintaining a stable condition and for the purpose of overcoming the business disasters and depressions which come from periods of excessive production, and is in good faith confined to those purposes, a very persuasive argument is offered the court for holding that the effect upon prices charged in transactions in interstate commerce is indirect and remote and that the agreement does not fall within the prohibitions of the anti-trust laws."

Such statements from a man still close enough to public office to have that point of view should go far in bringing general acceptance on the part of the refining industry to the operating program. They should aid in developing the will of the individual refining executive to make that program effective.

(Continued from Page 20)

October refining companies all told exceeded the proposed schedule of gasoline manufacture) said the report of the oil board committee. The same committee estimated that a one per cent change in gasoline demand from the corresponding period last year would change by one per cent the amount of crude to be run to stills to manufacture gasoline and still hold to the same stock figure on April 1.

Whatever is done by the institute in carrying forward these surveys of gasoline and supply demand, and in revising operating suggestions in the light of changes in demand or other factors, rests with the general refining committee of the institute, of which R. C. Holmes, president of The Texas Co., is the new chairman. It will be recalled that Mr. Holmes was chairman of the special institute committee appointed in 1929 to make a study of the surplus supply of crude oil and gasoline and suggest what the industry might voluntarily do to avoid a continuance of over producing.

The plan then contemplated was in general to hold crude production back to the average level of the year preceding, 1928. It was given up, however after the memorable meeting of the institute committee with the Federal Oil Conservation Board in the spring of 1929, when the attorney general, upon request of the chairman of the oil board, ruled that the oil board did not have the authority to approve such a plan as the industry contemplated.

At the Chicago meeting Mr. Holmes had not made any plans as to how the present study of gasoline supply and demand will be carried forward under the auspices of the institute. He said the only part the institute could take in the matter would be to study the current statistics and take some method to bring them to the attention of the individual refining companies, who must themselves adopt voluntarily whatever corrective measures are taken.

Both reports emphasized the importance, in any voluntary refining operating program undertaken, of making reductions in the volume of cracked gasoline turned out as well as the straight-run gasoline this in spite of perhaps some dislocation resulting in fuel oil sup-

---

Consolidated Statement by Statistical Subcommittee of Institute Special Committee on the Economic Situation, of Estimated Gasoline Production, Shipments and Resultant Stocks, by Districts, Oct. 1 to April 1. Based on Total of 40,000,000 Barrels of Gasoline in Stocks April 1.

(Figures in Thousands of Barrels of 42 Gallons)

	East Coast	Appal.	Ind., Ill., Ky.	Okla., Kans., Mo.	Inland Texas	North La.-Ark.	Texas Gulf	La., Gulf	Rocky Mt.	Calif.	Total United States
Estimated Stocks Oct. 1, 1930	5,425	1,168	5,462	3,086	1,981	246	3,757	858	1,896	14,363	38,242
October 1930:											
Production	4,687	1,168	5,008	4,951	1,872	722	5,965	1,954	983	6,852	34,162
Shipments	5,221	1,284	5,733	5,439	2,096	736	5,711	1,847	1,401	7,313	36,781
Closing Stocks	4,891	1,052	4,737	2,598	1,757	232	4,011	965	1,478	13,902	35,623
November 1930:											
Production	4,538	1,130	4,845	4,791	1,810	698	5,771	1,891	953	6,630	33,057
Shipments	4,837	1,202	5,243	4,941	1,860	743	5,446	1,689	1,048	6,894	33,903
Closing Stocks	4,592	980	4,339	2,448	1,707	187	4,336	1,167	1,383	13,638	34,777
December 1930:											
Production	4,687	1,168	5,008	4,951	1,872	722	5,965	1,954	983	6,852	34,162
Shipments	4,561	1,069	4,710	4,565	1,957	703	5,583	1,761	837	7,439	33,185
Closing Stocks	4,718	1,079	4,637	2,834	1,622	206	4,718	1,360	1,529	13,051	35,754
January 1931:											
Production	4,687	1,168	5,008	4,951	1,872	722	5,965	1,954	983	6,852	34,162
Shipments	3,914	999	4,058	4,329	1,883	677	5,158	1,820	802	6,597	30,237
Closing Stocks	5,491	1,248	5,587	3,456	1,611	251	5,525	1,494	1,710	13,306	39,679
February 1931:											
Production	4,233	1,054	4,522	4,471	1,690	652	5,387	1,766	889	6,189	30,853
Shipments	3,547	971	4,004	4,102	1,849	653	5,348	1,812	798	6,698	29,782
Closing Stocks	6,177	1,331	6,105	3,825	1,452	250	5,564	1,448	1,801	12,797	40,750
March 1931:											
Production	4,687	1,168	5,008	4,951	1,872	722	5,965	1,954	983	6,852	34,162
Shipments	4,221	1,175	5,098	5,092	2,124	782	6,172	1,767	1,018	7,463	34,912
Closing Stocks	6,643	1,324	6,015	3,684	1,200	190	5,357	1,635	1,766	12,186	40,000
Total 6 Months:											
Production	27,519	6,856	29,399	29,066	10,988	4,238	35,018	11,473	5,774	40,227	200,558
Shipments	26,301	6,700	28,846	28,468	11,769	4,294	33,418	10,696	5,904	42,404	198,800
Closing Stocks	6,643	1,324	6,015	3,684	1,200	190	5,357	1,635	1,766	12,186	40,000

ply and demand east of the Rockies and in spite of the inefficiency, from the refiners' point of view, in maintaining cracking plants idle.

The oil board's committee, of which Dr. Joseph H. Pogue, petroleum economist, New York is chairman, said in its report that if the suggested curtailment in gasoline manufacture were taken entirely in straight-run gasoline, the domestic crude oil requirement would range not much over 2,000,000 barrels daily.

"These figures suggest such a drastic curtailment in crude oil production that it seems desirable to consider whether the other components of gasoline cannot be adjusted so that the burden of curtailment would fall less heavily upon the crude oil producer," said its report.

"Cracked gasoline is subject to restriction by the shut-down of cracking stills; this adjustment can be made with minimum dislocation to the crude oil situation, but such action is hindered by the competitive sale of anti-knock gasoline, whose quality would suffer if the supply of cracked gasoline were curtailed."

The oil board's committee estimated that the proposed curtailment of gasoline supply applied on the same percentage basis to all sources of gasoline would exact a reduction in refinery runs of crude of only 4.5 per cent, and work a much less hardship on the producer than a seven or eight per cent reduction in gasoline output applied entirely to manufacture of straight-run gasoline.

In its resolution adopted by institute directors Nov. 13 at Chicago the board said it endorsed the report of the oil board's subcommittee and "recommended to members of the institute and to the American oil industry generally that they use their best efforts to so conduct their operations as to harmonize the supply of gasoline and crude oil operations with the views indicated in said report to the end that they may avoid the wasteful conditions indicated in said report by the proposed operations."

The board adopted the report of its own committee and the statistical report of its subcommittee and urged the industry as a whole to give careful study and consideration to both reports."

Heads A. P. I. for Third Time

THE election of Edwin B. Reeser, president of the Barnsdall Corp., Tulsa, as president of the A. P. I. for a third term comes as a recognition of his work in the interests of conservation. He has traveled widely and devoted a large part of his time to a vigorous campaign.

Estimated Gasoline Demand, by Refining Districts, Oct. 1 to April 1, 1931, Estimated Stocks, and Estimated Crude to be run to Stills, with Comparative Data, as Reported by the Statistical Subcommittee of the Special Committee of the American Petroleum Institute on the Economic Situation. The Compilation is based on Arriving at Total Gasoline Stocks of 40,000,000 barrels on April 1.

Total estimated gasoline demand, by districts, is divided into the sources of natural gasoline blended at refineries, cracked gasoline and straight-run gasoline

(Figures in Barrels of 42 Gallons)

Refinery Districts	Estimated Gasoline Demand Oct. 1-Apr. 1 Daily Avg.	Estimated Stocks April 1, By Districts	Actual Stocks Oct. 1, '30 Bureau of Mines	Actual Output September Bureau of Mines Daily Av.	Sources of Estimated Gasoline Output—Oct. 1-April 1 Natural Gasoline Blended at Refinery Daily Av.	Cracked Gasoline Daily Av.	Straight Run Gasoline	Per Cent Yield of Straight Run to Crude	Estimated Crude To Be Run to Stills To Produce Estimated Straight Run Daily Av.	Actual Crude Run To Stills September Bereau of Mines Daily Av.
East Coast	144,500	6,643,000	5,425,000	174,800	3,000	77,000	71,000	17.5	405,000	487,230
Appalachian	36,800	1,324,000	1,168,000	40,300	1,000	14,000	22,000	28.5	78,000	87,730
Ind., Ill.	158,500	6,015,000	5,462,000	177,300	7,000	79,000	75,000	27.0	279,000	298,000
Okla., Kans.	156,400	3,684,000	3,086,000	175,460	13,000	57,000	89,000	32.5	275,000	299,530
Texas	248,300	6,557,000	5,738,000	289,100	34,000	114,000	105,000	22.5	468,000	605,130
La.-Ark	82,400	1,825,000	1,104,000	74,960	10,000	34,000	43,000	18.0	240,000	156,960
Rocky Mountain	32,400	1,766,000	1,896,000	36,000	4,000	16,000	12,000	26.5	43,000	56,300
California	233,000	12,186,000	14,363,000	249,430	47,000	44,000	131,000	27	483,000	540,760
Total U. S.	1,092,300	40,000,000	38,242,000	1,217,430	119,000	435,000	548,000	24.1	2,271,000	2,531,660
Texas Gulf	183,600	5,357,000	3,757,000	207,400	26,000	91,000	75,000	20	377,000	442,630
La. Gulf	58,800	1,635,000	858,000	53,000	6,000	25,000	32,000	20	161,000	107,900
Total Gulf	242,400	6,992,000	4,615,000	260,300	32,000	116,000	107,000	20	538,000	550,530
Inland Texas	64,700	1,200,000	1,981,000	82,000	8,000	23,000	30,000	32.8	91,000	162,500
Inland La., & Ark.	23,600	190,000	246,000	22,000	4,000	9,000	11,000	13.9	79,000	49,067

Three Proposals Given A. P. I. Board To Remedy Abuses Under Code

By Roger B. Stafford
N. P. N. STAFF WRITER

CHICAGO, Nov. 14

THREE proposals were submitted to the directors of the American Petroleum Institute here this week in the hope that abuses involving controlled accounts and commercial discounts might be minimized.

The directors received the proposals but did not act on them under press of the proposed indorsement of the crude oil tariff and other matters. Action is expected to be taken by the board at its next meeting in New York, probably early in 1931.

Meanwhile any relief from the expense of meeting competition by equipping and financing lease and agency stations will have to depend on unofficial initiative.

Copies of the three proposals, adopted by the general committee of the marketing division the night of Nov. 11, will be sent each director of the institute. The proposals were released to the press so that all marketers may have a chance to scrutinize them before the next directors' meeting.

Any suggestions of marketers or comment on them may be submitted to the institute through the state code organizations, it was said. The state code committees probably will hold at least one of their monthly meetings before the directors' meeting. Any suggestions or comments of marketers may be submitted to those meetings.

The proposals in brief are:

1. Making minimum term of lease and agency agreement three years instead of one year with no cancellation of lease by either party under three years.

2. Application of Rules 1 and 10 to controlled accounts, and permitting installation of additional pumps, lifts, compressors and other equipment only when the growth of business at the station warrants it.

3. Suspension of the last paragraph of Rule 17 which exempts from posting of service station prices applied to charge contract commercial customers. This suspension would end secrecy that now enshrouds commercial prices, it is said.

Failure of the directors to give more time to the marketing problems was a disappointment to many marketing executives but it was recognized that the importance of the proposals warranted a study which the time at hand at Chicago precluded.

Henry M. Dawes who has been chairman of the general marketing committee since it was organized last year, urged that directors act as quickly as possible on the proposals in an effort to remove some of the disturbing influences in present marketing operations.

Sentiment that is common in the marketing division, was voiced by P. M. Miskell, Empire Oil & Refining Co., who reported on the code for the Mid-Continent region:

"I am in favor of the code but I am afraid it is being used as a guise to do a lot of things that wouldn't have been attempted had it not been put into effect. Two things under the code—lease and license agreements and commercial discounts—are bones of contention in every district. Companies are using the commercial discount to give discounts to buyers not entitled to discounts because of the quantity of gasoline they buy. We should do something to remedy these two conditions or it is useless to keep the code in existence."

The code has made possible an improvement in marketing conditions in the Pacific Coast and Rocky Mountain regions, according to H. D. Collier, Standard Oil Co. of California, and W. H. Ferguson, Continental Oil Co., respective chairmen of code committees for those regions.

H. H. Fuller, Sinclair Refining Co., chairman of the northeastern region, reported the code was not functioning well in New York state outside metropolitan New York. Elimination of cash commercial discounts would help the situation there, he said. He said he favored elimination of the commercial discount but realized this could not be accomplished. He recommended eliminating

1000 Men Are Working To Promote Code

CHICAGO, Nov. 13

ABOUT 1000 men are devoting part of their time to the promotion of the code of marketing practices, E. S. Hall, Standard Oil Co. of New Jersey, told the marketing group at the American Petroleum Institute meeting. Mr. Hall is a member of the national committee on interpretation.

These men are members of the 48 state committee and eight regional committees. There are also Paul E. Hadlick, secretary of the A. P. I. marketing division, and more than 25 state code committee and state marketer association secretaries devoting their full time to code work.

the secrecy surrounding the discounts as provided for in one of the general committee's proposals.

E. A. Holbein, Standard Oil Co. of New Jersey, substituting for C. G. Sheffield, chairman of the eastern region, reported many dealers in the Atlantic coast territory where prices include tenths of cents, were dropping the tenths, in some instances as much as 0.9 cent.

In other parts of eastern territory, particularly Pennsylvania, there were some serious violations of equipment provisions of the code and also of commercial discounts. A report for that state, from R. D. Leonard, Atlantic Refining Co. and read by Mr. Holbein, said pumps were being installed without cost to the dealer or were being put in at nominal cost with no payment in advance as provided by Rule 1.

"Jobbers cannot see why they cannot improve a dealer's property without a lease and agency agreement when the ma-

(*Continued on Page* 26)

Seubert Heads Marketing Division

THE code of marketing practices will continue as the major problem which E. G. Seubert, president of the Standard Oil Co. of Indiana, will face as vice-president of the A.P.I. for marketing. Mr. Seubert, as head of one of the largest marketing companies, is thoroughly familiar with the many code problems yet to be worked out.

Photo by Blank-Stoller, Inc.

Proposals Submitted to Remedy Abuses Under Code

CHICAGO, Nov. 13

PROPOSED remedies for abuses of commercial discounts and the equipment of lease and agency stations, were submitted to the American Petroleum Institute directors by the General Committee on Marketing. The recommendations will be considered by the directors at their next meeting. They are:

Equipment of Stations

"RESOLVED, that the general committee of the division of marketing recommend to the board of directors of the American Petroleum Institute that the code be interpreted, or, if necessary, amended, to incorporate the views and recommendations of its sub-committee's resolution, which reads:

"WHEREAS, this committee has been designated to investigate and make recommendations with reference to the lease and agency agreements, and,

"WHEREAS, it is agreed that under the lease and agency form of agreement dealers are at this time being advanced loans, and improvements otherwise prohibited by the code are being made; and,

"WHEREAS, it is agreed this practice is entirely contrary to the intent and spirit of the code of ethics, is uneconomic, and adds substantially and unjustifiably to the cost of marketing;

"THEREFORE, IT IS RESOLVED, that this committee recommends that Rules 1 and 10 of the Code, and the interpretations thereof, be made applicable to all dealers who sign a lease and agency, lease and license, and/or similar form of controlled operation, by which agreement the dealer either directly or indirectly continues to operate the outlet, except that if the business under such agreement develops to a point where additional loaned tank and pump equipment, as now permitted by the provisions of the code, becomes necessary, same may be installed at the expense of the lessee."

Term of Leases

"Resolved, that the general committee of the division of marketing recommend that the resolution adopted by the board of directors of the American Petroleum Institute on Dec. 5, 1929, relating to the words 'bona fide leases' in Rule 2 of the code be amended to read as follows:

"Resolved that, effective immediately, the words 'bona fide leases' in Rule 2 of the Code of Marketing Practices be interpreted to mean only formal written leases of not less than *three* years duration—stating the actual consideration to be paid as rental by the lessee, containing no privilege of cancellation on the part of *either party* in less than *three* years, and bearing the written consent of the fee owner of the property; to be filed for record by the lessee within 30 days after execution."

Commercial Discounts

"Resolved, that the general committee of the division of marketing recommend to the board of directors of the American Petroleum Institute that the last paragraph of Rule 17 and paragraph (e) of Rule 21 of the National Code of Practices for Marketing Refined Petroleum Products be suspended."

A.P.I. Marketing Division Personnel

FOLLOWING are the officers and members of the general committee selected to guide the marketing division of the institute in 1931:

Chairman, E. G. Seubert, Standard Oil Co. of Indiana, Chicago.
Vice-chairman, W. R. Boyd, Jr., American Petroleum Institute, New York.
Secretary, Paul E. Hadlick, American Petroleum Institute, New York.

General Committee

Elected By Membership

W. T. Atkins	Skelly Oil Co.	Kansas City
J. W. Carnes*	Sinclair Refining Co.	New York
H. D. Collier*	Standard Oil Co. of Calif.	San Francisco
S. B. Eckert	Sun Oil Co.	Philadelphia
M. G. Eitelman*	Barnsdall Refining Co.	Tulsa
W. H. Ferguson	Continental Oil Co.	Denver
H. D. Frueauff*	Cities Service Co.	New York
C. N. Humphrey	Standard Oil Co. of Neb.	Omaha
Isaac H. Johnson	Johnson Oil & Refining Co.	Chicago
R. D. Leonard*	Atlantic Refining Co.	Philadelphia
R. W. McDowell	Mid-Continent Petroleum Corp.	Tulsa
R. D. Matthews*	Union Oil Co. of Calif.	Los Angeles
W. S. S. Rodgers*	The Texas Co.	New York
E. L. Shea*	Tide Water-Associated Oil Co.	New York
C. G. Sheffield	Standard Oil Co. of N. J.	New York
H. A. Trower	Phillips Petroleum Co.	Bartlesville, Okla.
W. G. Violette*	Standard Oil Co. of Ky.	Louisville
L. S. Wescoat	Pure Oil Co.	Chicago
H. A. Wilkinson*	Standard Oil Co. of N. Y.	New York
A. C. Woodman*	Richfield Oil Corp. of N. Y.	New York

Appointed By President

H. B. Earhart*	White Star Refining Co.	Detroit
H. R. Gallagher*	Shell Co. of Calif.	San Francisco
W. T. Holliday*	Standard Oil Co. of Ohio	Cleveland
Roy B. Jones*	Panhandle Prod. & Ref. Co.	Wichita Falls
G. R. Nutty	Gulf Refining Co.	Pittsburgh

*Re-elected

jor companies are improving the property with the lease," Mr. Leonard wrote.

Commercial discount prices have been extended to persons not eligible for them, Mr. Leonard wrote. The metal tag used in connection with commercial and charge accounts should be eliminated, he added.

From North Carolina it was reported that commercial discount prices were being given widely. Dealers also were dropping the fractions from prices. Only two companies—Standard of New Jersey and The Texas Co.—were reported to be supplying dealers with price tags for pumps containing the fractions. Another abuse was listed as the flat rental from stations.

H. W. Dodge, The Texas Co., chairman of the southwestern region, reported there had been an increase in complaints of code violations in the last 90 days. Mr. Dodge interpreted this as a sign of more interest in the code.

Report for the middle western region was submitted by L. S. Wescoat, Pure Oil Co. Roy B. Jones, Panhandle Producing & Refining Co., reported for the southwestern region.

H. T. Klein, counsel of The Texas Co. and chairman of the national committee on interpretation of the code, in opening the forum on the code, said he was more confident of the instrument's success than he was a year ago, although the last six months had been a period of turbulence. He stressed the need of personal character as a factor in following the provisions of the code.

He characterized the commercial discount as a perplexity and said 95 per cent of the marketing division opposed it.

Mr. Klein, E. S. Hall, Standard Oil Co. of New Jersey, and Roy B. Jones, members of the national committee, gave opinions of practices which have been questioned. Some of the opinions are as follows:

Work done in aiding a dealer in construction or installations about a service station by a company construction supervisor should be paid for by the dealer.

If a dealer moves from one side of a street to the other side, he must pay for the cost of installing a refiner's or jobber's tanks and pumps at the new site.

An oil company may lease a part of an airport and install its equipment. It may then hire as its agent the operator of the port.

One oil company may induce a dealer to contract to sell its goods at the expiration of a contract it may have with another supplier unless the first supplier has an option to renew its contract.

If a dealer contracts to change suppliers at the termination of a contract the first supplier may not induce the dealer to abandon the contract with the second supplier and renew his first contract.

If a marketer meets the low price competition of another marketer and the price is carried below the costs of a third marketer the third marketer cannot charge the second marketer with unfair competition. The third marketer is in the position of an innocent bystander.

The interpretation against giving gasoline, oil, or prizes to stunt flyers or aeronautical contestants, is extended to cover power boats, automobiles and motorcycles. The extension has just been made by the general committee on marketing.

Serving of airplanes with gasoline direct from tank trucks is not a violation of Rule 15. Road building equipment may also be served directly from tank trucks.

In the discussion that followed these informal interpretations, J. W. Carnes, Sinclair Refining Co., said there was no practical way of posting commercial discount prices at service stations by a company with wide distribution. His suggested remedy of elimination of the discounts brought applause from the men present.

E. P. Angus, Magnolia Petroleum Co., said he had observed that some of the companies that were condemning the commercial discounts most, were selling to jobbers who were operating with the discount.

C. S. Smith, National Refining Co., suggested that suppliers insert in their sales con-

tracts a clause under which the suppliers may refuse to sell the jobber or dealer goods unless he operates under the code. National Refining has followed this practice for some time, Mr. Smith later said. Mr. Klein said the form was legal.

J. B. Russ, Consolidated Oil Co., Houston, declared the time was never better for jobbers as well as major companies to clean house in their operations. Major companies should not hold off eliminating the commercial discount on account of jobbers, he said, because jobbers will listen to the advice of their suppliers. Mr. Russ said he believed marketers in some state or region should take the lead in throwing out commercial discounts.

Mr. Hall said that he had frequently asked marketers at code meetings whether they would prefer to continue under the code or return to conditions that existed before its adoption. Invariably they replied, he said, that they prefer to operate with the code.

Mr. Dodge in telling about meetings of state code committees, said it was necessary to extend education work. Disappointment in the code among marketers was due, he said, to lack of understanding of the code or failure of the marketers to attend code meetings and get the spirit of the movement.

An alert and interested state code committee is essential to the proper functioning of the code, J. H. Dyer, Sinclair Refining Co., said in his address on the "Practical Application of the Code." Mr. Dyer said the code has been "in a fair way successful in those states which have alert committees and capable chairmen.

"The code has survived the severe test of a strenuous year in the industry—a year marked by the keenest and most aggressive competitive activity," Mr. Dyer said. "That it has survived so well this pressure, is a remarkable tribute to the patience and effort of those who framed the code and who have devotedly promoted it.

"It has gotten the industry into closer contact, understanding, and sympathy. In those territories where it has functioned reasonably well, it has rid the industry of many vicious and costly practices. It has had a definite tendency to reduce the number of wasteful new installations because of the working of Rule 1 which requires the lessee of equipment to sustain the installation cost."

He concluded his address with the following thoughts:

We are in the oil business. We are the representatives of a gigantic industry that is rendering a necessary and vital service to the people of our country. The farmer or rancher in the most remote section may have his petroleum products delivered to his very door, or to his tractor in the field. This is something which can be said of no other industry and no other commodity.

"In our towns and cities, alert, convenient service is rendered to the motorist in his own neighborhood. Not only has the oil industry provided the facilities for vending its wares along our highways, but it has provided many of the essential modern conveniences of travel, rest rooms, etc.

"We should have a genuine pride in being in the oil industry. It is more than our bread and butter—it is our opportunity for service to humanity and to the nation. Every man in the industry owes his contribution to the welfare of the industry. We should think well of it, speak well of it and stand by it.

"We are entitled to the esteem, respect and confidence of the public. To be respected, we must be respectable in our operating practices and in our relations with each other.

"The American people are willing and anxious to give credit where credit is due. They are willing to pay a living wage to the oil industry for the service it renders.

"It is not the code which is on trial today. It is we who are on trial.

"The close relationship and contact with the public we serve is the privilege and the responsibility of the marketing end of the oil industry. We have our code of practices which is the sound, logical, common-sense platform on which we all can stand, and adherence to which will help mightily in solving the complex problems confronting us.

"Let's put the code into practical operation."

Holmes Heads Refining Division

AS vice-president for refining of the A. P. I., R. C. Holmes, president of The Texas Co., will have a big job in seeking to promote the economic education of the refining branch of our industry.

He is familiar with the individual problems of refiners in all sections since his company's operations are so widespread.

Underwood & Underwood Studios, N. Y.

Bargains--Not Duty to Buy--Will Stimulate Business Activity

CHICAGO, Nov. 11

BUSINESS can dispel depression, but not by appealing to the masses to open their pocketbook and buy for the good of the country, Phillip R. Clarke, Central Trust Co. of Illinois, told the American Petroleum Institute at its general session Tuesday. While campaigns to buy more are laudable in purpose they will not succeed if based on altruism only, he said.

Millions have ceased buying, though their income has not been curtailed, Mr. Clarke said, through fear for their jobs and the belief there is nothing to be done but sit tight and save. As long as the great bulk of the people are in fear and believe that they should trim their sails, conditions will not improve.

The remedy he suggested is that the potential buyer with money to spend be shown prices are so low that it is to his advantage to buy now. "If a liberal scale of buying is to resume," Mr. Clarke said, "inhibitions must be compelled by sufficient thinking to know that expenditure today is opportune rather than an obligation to human welfare." The speaker cited the example of an economist who was doing his Christmas shopping in August in the belief that December costs would be higher.

"When it is understood," he said, "that the dollar may be reaching its maximum purchasing power, the individual buying that has been so vitally needed to stimulate trade will quickly appear—not to the call of duty but to the call of value."

Tracing the causes of the depression, Mr. Clarke told the oil men overproduction had caused a constantly declining price level since the war but that such pulmotors as installment selling, higher wages and the like had kept the boom going until it stopped last year through "sheer exhaustion." The crisis was hastened by political disturbances in India, China and Russia, former great consumers, he stated.

While not making any predictions when the depression will end, the banker pointed to the hopeful signs that prices of such raw materials as rubber, sugar and cotton have started to climb slightly in recent weeks. "These trends strongly suggest that the decline has finally spent itself and is possibly already on the up-grade," he said.

Quoting General Dawes he said: "The business fool of 1929 was he who had no fear. The business fool of today is he who has no hope."

The banker praised the oil industry for its efforts at oil conservation through orderly production. He said capital cannot help but flow much more freely to a stabilized industry.

As a word of advice he said: "Keep your cash reserves as large as possible. No one can accurately determine how much capital an oil company may require to keep itself readily responsive to such expansion as may be dictated by developments of a somewhat problematical tomorrow."

A. P. I. Directors Debate Tariff on Oil Imports

CHICAGO, Nov. 13.—No formal action was taken by directors of the American Petroleum Institute on the oil tariff question. Wirt Franklin, Oklahoma operator, a director and principal leader in the campaign that has been under way two years to obtain protection of the domestic industry in this manner, precipitated the issue.

On Wednesday evening a motion was made to table the resolution offered, which would have pledged the institute to support in principle a tariff on oil. By a vote of 21 to 19 the tariff proponents kept the issue alive until the following morning. Then after more debate had taken place, there was a rollcall upon the resolution. There were 17 who voted in favor of committing the Institute to support of a tariff, 15 who opposed, 10 not-voting and 26 absentees.

Mr. Franklin, in spite of having a majority of those who voted, asked that the vote not be recorded and that the matter be dropped there. He said that with more than half the directors failing to take a position on the question, it was not representative of the institute. His motion to withdraw was roundly applauded.

Considerable discussion was had in the directors' meetings of imports and in the resolution which accepted the report of the economics committee, the directors expressed themselves as not satisfied with the rate at which foreign oil is being produced, feeling that curtailment in South America should be commensurate with that which has been practiced in domestic fields. It was felt by many of the directors that the trend of affairs in Venezuela is in the direction of curtailment further than they have yet gone and that there would be substantial correction of that situation.

Gas Law Upheld in Kettleman Case

By Telegraph

LOS ANGELES, Nov. 17.—Constitutionality of the California gas law has been sustained by the Superior court which heard the Kettleman hills case. The court handed down an opinion which is considered revolutionary in some quarters.

The court held that the law is constitutional because oil and gas in the ground are the property of the people.

The conclusion that the people of California own the oil and gas is inescapable, the court said. It is not conceivable, if it belongs to the owner of the land that a neighbor may, by putting a hole in the ground and taking it, by any process of law acquire title. The court held also that the state has the right to control development and division of any profits arriving from such development.

Supreme Court Test of Nation-Wide Curtailment Is Suggested

CHICAGO, Nov. 12

SUGGESTION that our industry seek a court decision covering the legality of agreements to curtail crude production nationally was made to the American Petroleum Institute by Col. William J. Donovan, former assistant attorney general of the United States. He addressed the general session Tuesday afternoon.

The U. S. Supreme Court has held that production of a commodity within any state is not interstate commerce, he said. But every case presented to the court so far has been involved with such other elements as blacklisting, price fixing or allocation of territory. Therefore, a new case based entirely on the facts in the oil industry would serve to clarify the law under which the industry must operate.

Our industry should not hesitate to take such a course of action because of its experiences at Washington last year when it sought approval by the Federal Oil Conservation Board of the curtailment plan suggested by the institute, Col. Donovan said. He resigned from the department of justice shortly before Attorney General Mitchell passed upon that plan in the Spring of 1929. He stated on this point:

"This agreement was submitted to the Federal Oil Conservation Board for the purpose of securing its approval. The chairman of that board, the secretary of the interior, submitted to the attorney general the question as to whether or not the board had authority to approve a proposed plan and agreement for curtailment of production of crude oil. The attorney general responded the board had no authority to grant to any persons immunity from the operation of acts of congress prohibiting agreements in restraint of interstate commerce . . . and that no action taken by the board could have the effect of relieving parties to such an agreement from the operation of the anti-trust laws.

"As I read his opinion, that was all the attorney general decided. Certainly the conservation board created by executive order of the president for the purpose of studying the problem of conservation had no authority to grant immunity under the anti-trust laws. The President himself has no such power.

"I simply wish to point out the fact that it does not appear from the opinion of the attorney general that he passed upon, or undertook to pass upon, the question that we have discussed here. As I understand it there is nothing in that opinion which would preclude your industry from submitting this question to the department of justice.

"Of course, the industry would submit its plan to the attorney general, not for the purpose of obtaining immunity, but for the purpose of presenting the facts to the department of justice and, if necessary, joining with it in stating a legal issue for submission to the judgment of the court and securing a decision as to what the industry could, or could not do in these particular circumstances under the law.

"IT MIGHT well be that a statement to the authorities of the circumstances surrounding this industry and a fair and complete presentation of all the factors would convince them that such an agreement would restore normal and healthy competition and does not constitute a violation of the Sherman law. It would be unfair to the department of justice and to the attorney general to assume they have closed the door in the face of any industry that desires within the law to have its rights determined.

"I do not undertake to anticipate the decision of the attorney general. My only point is to clear up in the minds of the leaders of this industry what the attorney general by his opinion of March, 1929, in relation to the Federal Oil Conservation Board decided, or undertook to decide. He did not decide that such an agreement as is discussed here was in and of itself illegal and it would be unfortunate if such a misunderstanding of the attorney general's opinion were continued to the extent of precluding your industry working out directly with the government the mutual problem of oil conservation."

BELIEF that the Sherman law is resilient enough under changing economic and social conditions to justify its continuance on the statute books was expressed by Col. Donovan. He pointed out that, if the Sherman law is to be repealed, the public will demand government control such as that now exercised over public utilities and the railroads.

"Industry will have to pay a price for the change or modification of the anti-trust laws," he said. "That price may well be the surrender to government of a greater participation and control than now. It is easier to get the government into business than to get it out. If this is to be avoided, it remains for industry to prove its ability to so regulate itself as to make any such change unnecessary."

Col. Donovan pointed out that the problem now before the industry is nation-wide overproduction. Even if unitization and co-operative restrictions are worked out in individual pools the problems of competition between pools still remains. It is to provide for agreements covering nation-wide curtailment to approximate market demands that the speaker suggested a test case under the Sherman law.

Institute to Prepare Manual Covering Fire Protection

CHICAGO, Nov. 13

A MANUAL on fire protection for marketing companies is to be prepared by the committee on fire prevention of the marketing division of the American Petroleum Institute. R. A. Wotowitch, Cities Service Co., chairman of the committee, announced the plan at the A. P. I. meeting.

The committee also is considering problems in the marketing division such as static and stray currents as causes of fires, protection of railroad sidings against fire danger, and insurance rating schedules.

The committee at present is concerned chiefly with fire hazards at service stations, Mr. Wotowitch said. This is a big problem, he added, because of the turnover of personnel at stations, but it is hoped to teach station salesmen in the high points of fire prevention and fire fighting.

The problem at bulk plants, he believes, is less difficult because the labor turnover is less and there is room for installation of mechanical equipment to control fires.

The committee was appointed last May but because its members are scattered over the country its first organization meeting could be held only within the last week. Mr. Wotowitch reported great interest among marketers in fire prevention. He said the major companies and larger Independent marketers had done a great deal toward fire prevention but that little had been done by the smaller companies.

The committee during its short existence, has tried to determine these three fundamentals:

1. What are the hazards attending the marketing of petroleum products?
2. What are the best methods to reduce these hazards?
3. What methods shall be used to combat fires?

The committee's answers to the three questions are: "We know that friction combustion, electrical storms causing ignition, and any other sources of sparks or flashes constitute fire hazards of the first order. Explosions, faulty mechanical devices and equipment, improper installations of heating equipment, and careless handling of spark or flame-producing materials similarly are serious fire hazards.

"It would seem that all men employed in handling petroleum products should have knowledge: first, of possible fire hazards; second, of the disaster which may result; and third, of the fundamentals of fire protection. We believe groups of trained and efficient fire fighters should be organized.

"We believe in the widespread dissemination of information concerning the type and proper use of fire fighting equipment peculiar to the petroleum industry. Furthermore, there should be regular inspections, not only for the purpose of checking inefficient apparatus and equipment, but also to familiarize with the operation of approved equipment those who would handle it in emergencies."

Ellison Heads Stanolind Pipe Line Company

TULSA, Nov. 17.—Election of Robert S. Ellison to the presidency of the Stanolind Pipe Line Co., succeeding John R. Manion, was announced Monday. Mr. Ellison also heads the Stanolind Crude Oil Purchasing Co. Mr. Manion resigned to remain in service of Sinclair interests which are establishing a pipeline division to replace the system recently sold to the Standard Oil Co. of Indiana.

B. H. Sibole who has been with the organization for several years was made vice president and director. A. L. Carlson, treasurer of the Stanolind Crude Purchasing is now secretary and treasurer of the pipeline company. William G. Heltzel, of the engineering department was made general superintendent. C. M. Scott, Jr., has become chief engineer; J. L. Shoemaker, general auditor; Clay Tallman is now general attorney and W. L. James is in charge of purchases.

Those besides Mr. Manion who resigned to remain with Sinclair are R. B. Hanna, secretary and treasurer; J. F. Blake, general superintendent; Frank Hadley, chief engineer; K. L. Laufman, general auditor; E. H. Chandler, general counsel, and H. A. Woodard, purchasing agent.

Demand for Texas Crude 718,000 Barrels

By Telegraph

FT. WORTH, Nov. 18.—Demand for Texas crude in the prorating period beginning Nov. 25 has been estimated at 718,000 barrels daily. This is indicated from nominations made by crude purchasers to David Donoghue, technical adviser to the central prorating committee.

Champlin Again Cuts Oklahoma Crude

By Telegraph

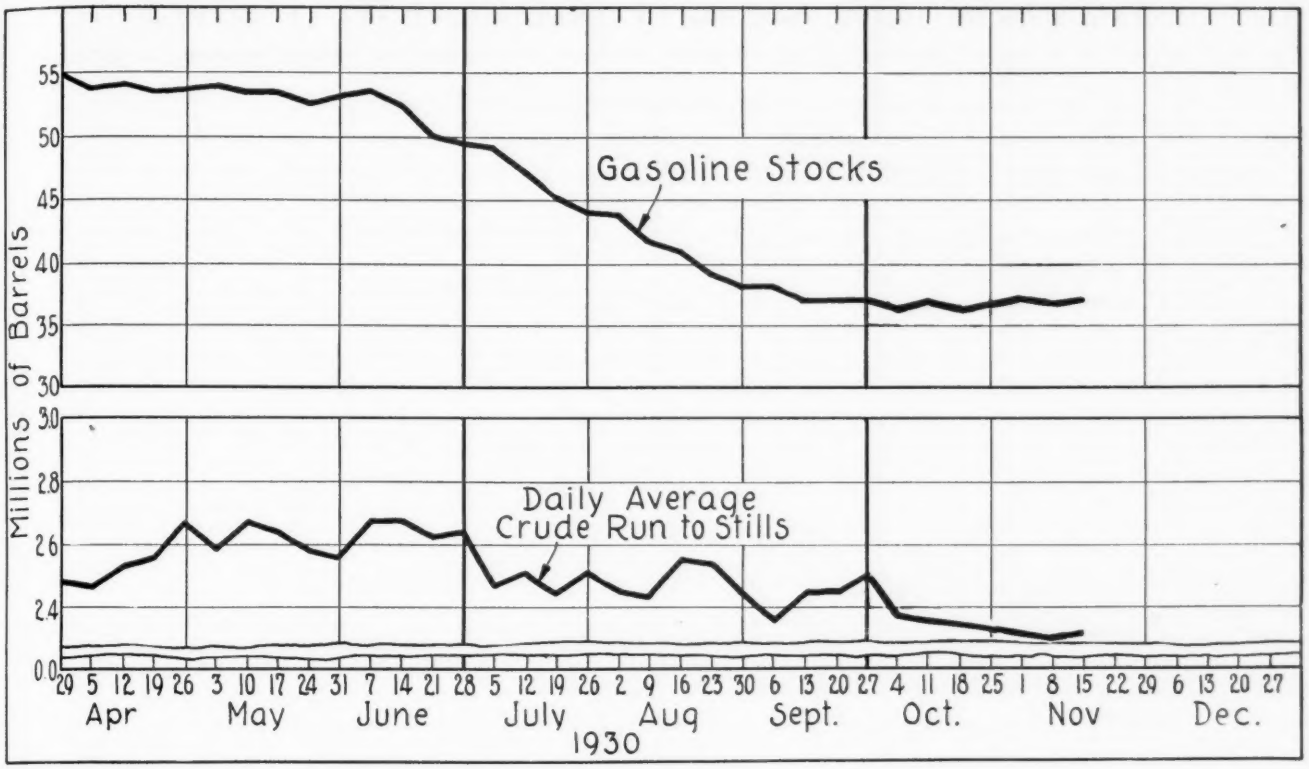
TULSA, Nov. 17.—Champlin Refining Co., Enid, Okla., reduced its posted prices for Oklahoma crude 10 to 20 cents per barrel today. The new posting begins at 71 cents for 32-32.9 gravity oil. A 2-cent differential was posted for each degree of gravity up to a top of 87 cents for 40 gravity oil and lighter.

Champlin was one of the first to post a lower price for crude in Oklahoma prior to the general downward revision of prices in October.

Correction

Prices of U. S. Motor gasoline at Norfolk and Charleston in the Eastern Domestic Market, as of Nov. 17, should be 7.50 cents flat, instead of 7.50 to 7.75 cents, as published on page 90.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Texas and California Gasoline Stocks Rise

By Telegraph

NEW YORK, Nov. 18

GASOLINE stocks increased 251,000 barrels at plants of refiners who reported to the American Petroleum Institute in the week ended Nov. 15. Total stocks at the close of the week were 37,263,000 barrels. Nov. 1 the same group of plants held in storage 37,215,000 barrels. The increase in inventories in the first half of the month, therefore, has been only 48,000 barrels.

Considering the lateness of the season it is remarkable that the increase in stocks has been so small. Another remarkable fact is that every group except two reduced gasoline stocks in the past week. Texas refiners increased their stocks 302,000 barrels, largely on the Gulf Coast. California refiners increased their storage 53,000 barrels. All other groups showed small reductions totaling in the aggregate 104,000 barrels.

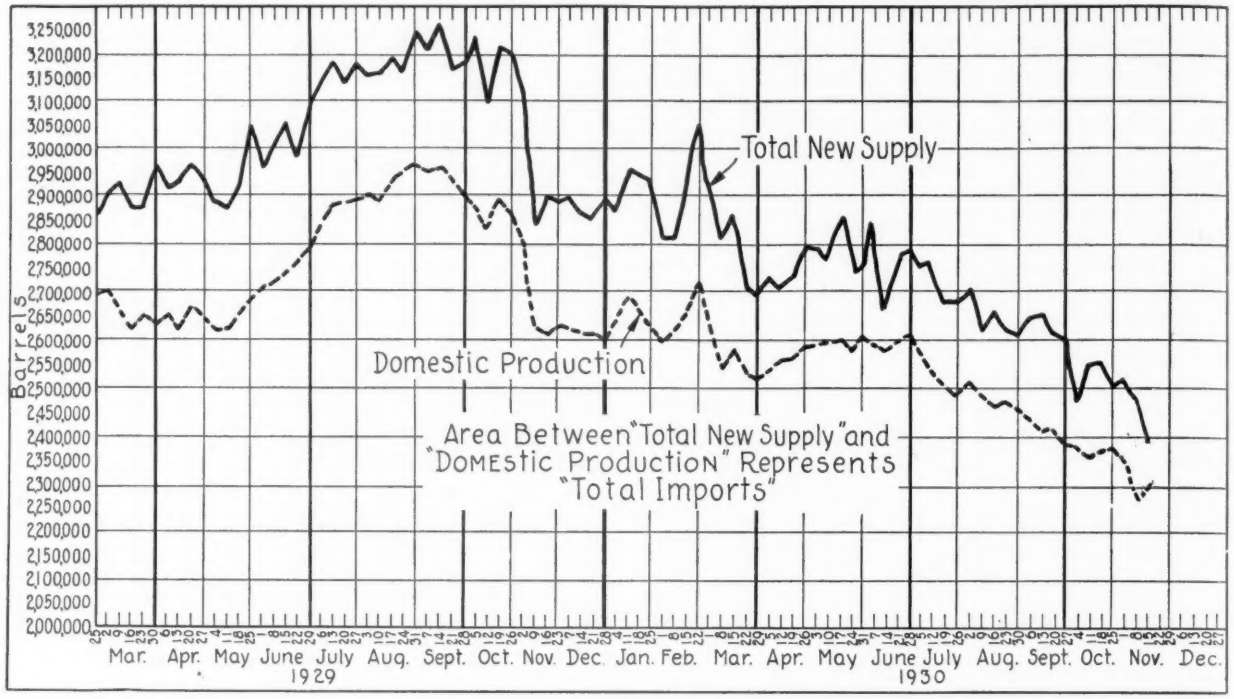
Fuel and gas oil stocks increased 779,000 barrels to 139,779,000 barrels. In the month to date there has been an increase in heavy oil stocks of 173,000 barrels.

Reporting refiners utilized 64.2 per cent of their operating capacity during the week, as compared with 63.8 per cent in the first week of the month. Central states and Mid-Continent plants showed the largest increases in crude run to stills.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels)			
		Nov. 15	Nov. 8	Nov. 15	Nov. 8	Gasoline Nov. 15	Gasoline Nov. 8	Gas & Fuel Oil Nov. 15	Gas & Fuel Oil Nov. 8
East Coast	100.0	461,400	482,000	75.3	78.7	5,643	5,705	11,936	11,878
Appalachian	93.2	68,600	73,400	52.1	55.7	802	824	1,016	990
Ind., Ill., Ky.	97.5	254,700	236,900	66.9	62.2	4,349	4,471	3,858	3,946
Okla., Kans., Mo.	89.4	265,400	248,100	64.4	60.2	2,187	2,215	4,615	4,577
Texas	91.9	514,600	522,300	69.2	70.2	6,752	6,450	10,772	10,558
La., Ark.	98.3	164,000	148,600	62.6	56.7	1,207	1,217	2,054	2,062
Rocky Mountain	93.1	46,000	44,300	32.9	31.7	1,472	1,532	1,014	1,027
California	98.8	518,000	519,000	58.4	58.7	14,851	14,598	104,534	103,982
Total	95.7	2,292,700	2,274,600	64.2	63.8	37,263	37,012	139,799	139,020
Texas (Gulf Coast)	100.0	386,700	410,300	73.0	77.5	5,539	5,242	8,006	7,787
La. (Gulf Coast)	100.0	108,400	106,300	73.5	72.1	973	991	1,109	1,105

Review of Late Production News



Daily Average Crude Oil Production and Imports Based on Current Reports of American Petroleum Institute

AGAIN of 7300 barrels in daily average crude production in the U. S. the week ended Nov. 15 brought production to 2,304,550 barrels, according to the American Petroleum Institute. A gain of 16,700 barrels in Oklahoma, a decline of 6600 in Texas fields and smaller declines elsewhere account for the country's gain.

Oklahoma, Kansas

THREE wells featured production news in the Mid-Continent. At Oklahoma City another gasoline well extended the pool still deeper into the city proper. The new well, which is just north of the Rock Island tracks, near the fairgrounds, was completed for 187 million cubic feet of gas. It made 105 barrels of gasoline in 50 minutes, but had to be shut in when sand began to cut the connections above the master gate.

A good producer was completed in the southeastern Konawa area when the Magnolia Petroleum Co. drilled in a well in 29-6-6 that made 3174 barrels of oil in 10 hours. It has been shut in.

Current production in this country by pools is found on page 73

In the Texas Panhandle the largest gas well to be completed in southeastern Gray county was reported. It made 35 million cubic feet of dry gas from the lime pay at 2330. It is in Sec. 36, Blk. 25, H. & G. N. survey.

Texas, New Mexico, Louisiana

OPERATING conditions in the Pettus field of the Bee-Goliad district, South Texas, will come before the Railroad Commission of Texas at an Austin hearing, Nov. 26, when it is proposed to discuss regulations protecting against underground waste. It is suggested that surface casing be set at least 450 feet below sea level and cemented with 400 sacks; string of casting to be set above deep pay in wells completed below the Nichols sand and cemented enough to protect the well 300 feet above the Nichols sand.

In the Hobbs field, New Mexico, Amerada Petroleum Corp.'s B-4 state well gauged 25,175 barrels daily and is second in size only to Continental Oil Co.'s A-3 state, which made 25,531 barrels on proration test.

California

SEVEN completions in the Long Beach field added 6097 barrels of flush production during the past week. Production of the 772 wells in the field averaged 104,230 barrels per day, an increase of 4000 barrels over the previous week. There are 34 wells due for production tests in the next few weeks.

Playa del Rey output now averages 42,000 barrels daily from 81 wells. Another 90 wells are drilling in the pay area. Umpire Neal Anderson is trying to get a proration agreement signed without great success.

Richfield Oil Co. will test its deep well in the North Belridge field this week.

States to Ask U. S. Control Of Gas Pipe Lines

CHARLESTON, S. C., Nov. 17.—State railroad and utility commissions in convention here decided to ask Congress for legislation to assure control of the interstate transportation of natural gas. They approved a uniform accounting system to be used by natural gas companies, the theory being that unless the records were kept in a uniform manner, the state authorities could not effectively regulate the flow of gas through pipe lines from one state to another.

An eruption was caused by the report of a committee, of which a Utah commissioner was chairman, assuming that the federal government, for reasons of state's rights, should be kept out of natural gas regulation, and urging that the states could handle the situation.

That report irritated Kansas commissioners, who said they had had experience in the matter and that the states could not handle it. They said the big natural gas companies that owned the pipe lines and, in many instances, controlled the distributing companies, kept the latter so poor by charging 40 cents per 1000 cubic feet for something that cost them about 15 cents, that there was no margin in which state commissions could operate to regulate the prices to consumers. The Kansans made such a protest that, the committee reversed itself and reported the states did not have the proper regulatory power and that the association should ask Congress to enact legislation assuring control.

Geologists to Meet At San Antonio

TULSA, Nov. 15.—The American Association of Petroleum Geologists will hold its sixteenth annual meeting at San Antonio, Texas, March 19, 20 and 21. Headquarters will be at the Gunter hotel.

At the same time meetings will be held by the Society of Economic Paleontologists and Mineralogists and the Society of Petroleum Geophysicists.

A special feature of the meeting will be a motion picture lecture by Dr. Laurence Gould, geologist and second in command of the Byrd expedition to the south pole. Also there will be a motion picture presentation of aerial map making for oil companies.

Blakeslee to Head New Safety Division of Institute

CHICAGO, Nov. 13

W. R. BOYD, Jr., executive vice president, American Petroleum Institute, announced that about Jan. 1 the institute would take over the petroleum safety work of the National Safety Council. H. N. Blakeslee who has been in charge of safety work in the petroleum section of the National Safety Council for several years, will be in charge of like activities of the institute. Mr. Blakeslee will move his headquarters from Chicago to Dallas.

Mr. Blakeslee's experience in the oil business started back in 1911 when he entered the employ of the old Kern Trading & Oil Co., Maricopa, Calif. In March, 1917, he joined the Associated Oil Co., San Francisco. He later became superintendent of employment and then safety engineer. At the time he left Associated, Mr. Blakeslee was secretary of the Society of Safety Engineers of California.

H. N. Blakeslee

There is profit for oil companies in safety work, G. S. Boetsma, Standard Oil Co. of New Jersey, told the marketing group of the institute here this week.

"We are justified in assuming," he said, "that organized and well directed efforts to prevent or reduce accidents result not alone in lower insurance costs and corresponding reduction in hidden or indirect costs, but in increased organization efficiency, due to improved morale among the workers. We recognize yet another reason for these efforts, and that is the moral obligation to do our part to prevent needless suffering."

Mr. Boetsma gave these five principles for converting an unsafe marketing organization into a safe and efficient one:

"1. The responsible executive must, himself, be thoroughly sold; must recognize the value of safety effort, and be determined to improve conditions.

"2. His recognition of the value of safety must be passed along and transmitted throughout the organization until every employee is reached.

"3. The selection and appointment of a qualified safety man, whose entire time (assuming the organization is large enough to warrant it) is devoted to the promotion of safety, and the appointment of a safety committee, which acts as a reviewing body and court, to determine and carry out disciplinary penalties in cases of employees involved in avoidable accidents.

"4. A continuous educational program directed at all employees.

"5. The elimination, as far as humanly possible, of all physical and mechanical hazards through engineering and mechanical means."

Standard Anti-Knock Test Method Nears Completion Stage

By Arch L. Foster

N. P. N. STAFF WRITER

CLEVELAND, Nov. 14

MOTOR fuels of high anti-knock rating now may be made from heavy petroleum stocks by hydrogenation, according to reports by Standard Development Co. technologists presented to the members of the refining division of the American Petroleum Institute.

The experimental work on the hydrogenation process at the Standard Oil Co. of New Jersey's plant at Bayway has been carried on under the direction of its subsidiary Standard Development Co.

No very positive statements had previously been made on this phase of the process, but results obtained during recent investigations proved that this important step in gasoline synthesis can be accomplished commercially, the authors stated.

The development of a standard detonation determination method has progressed far toward the final details under the direction of committee under Dr. T. A. Boyd of General Motors Research Corp. Details of the engine have been practically completed, a standard reference fuel, a mixture of normal heptane and iso-octane, has been tentatively agreed upon, and the major details of the method of operation are fairly well worked out, it was stated. Dr. Daniel Roesch, of Armour Institute of Technology, demonstrated the use of an acoustimeter in determining the relative intensity of detonation in the automotive engine, and this instrument is one which is being considered by the subcommittee.

Catalysts developed recently are efficacious in the removal of sulfur compounds from petroleum and its distillates, removing some types of sulfur-containing compounds in excess of 90 per cent, according to Dr. Hugh S. Taylor of Princeton Universty, who has charge of the sulfur project of the A. P. I. research program.

Losses of light oils by evaporation in storage may now be calculated from vapor pressure data with good accuracy, and the method of the calculation and the data required was discussed before the meeting by Drs. W. G. Whitman and G. W. Chenicek, Standard Oil Co. of Indiana, who showed remarkable accuracy between their calculations and losses determined by other means.

Requirements of airplane Diesel type motors as to fuel, protection of oil tankers from explosions during loading and unloading by the use of flue gas, and the application of this method to the same problems of operating refinery equipment, are among the other subjects occupying the technologists' attention during the four-day session just closed, the eleventh annual meeting of the institute.

Hydrogenation

Drs. R. T. Haslam and R. P. Russell of the Standard Development Co. reviewed data previously presented recently at Atlantic City and Cincinnati on hydrogenation, with some additional information not previously reported. They outlined the method of preparation and purification of hydrogen from natural or refinery gas, and stated that the cost of hydrogen manufacture per unit for a plant of 5000 barrels hydrogenating capacity is about 15 per cent less than for a plant of half that capacity, and cost for a 10,000-barrel plant is some 12 per cent less than for the 5000-barrel plant.

The authors said that the catalyst employed is very rugged, is not poisoned by sulfur, and that runs of eight months duration have been made without detriment to the catalyst. No definite information is as yet available, he says, as to the ultimate life of the catalyst in service.

The production of motor fuels of high anti-detonation rating by the hydrogenation process was stated to be an accomplished fact by the author, a subject just touched upon in previous papers by these authors. High anti-knock motor fuel may be produced, according to results reported, rating well above the present Ethyl gasoline standard, by variation in the operating conditions.

This reaction may appear to be a combination of degradation and aggradation reactions, the production of aromatic hydrocarbons being controlled by the conditions under which hydrogenation is accomplished. Such a synthesis is in direct contrast to that by which lubricating oils are improved, in which saturation is increased to produce compounds more paraffinic in nature, and in the treatment of cracked distillates where further saturation of light hydrocarbons reduces the amount of gum and other deleterious substances.

Evaporation Losses

One of the simplest methods for determining small losses by evaporation, or losses sustained during transfer of volatile liquids into or out of storage tanks, was presented by Drs. Chenicek and Whitman. This determination is made by determining the vapor pressure of

the gasoline or volatile naphtha before and after transfer or storage, from which the evaporation loss may be calculated.

Briefly the procedure is to bubble measured amounts of air through a measured sample of gasoline at standard temperature in such manner as to insure practical saturation. The resulting vapor volume is determined as well as the loss from the liquid sample. The simple calculation of the vapor pressure may be made from these data.

By plotting the vapor pressures so determined, usually on semi-log paper, with vapor pressure as ordinates against per cent off, the horizontal distance between the curves is the measure of the loss sustained. The accuracy of the method has been tested for some eight months at the Whiting refinery of the Standard Oil Co. of Indiana on tanks equipped with different types of roofs, both to determine the amount of loss sustained, and to check the accuracy of the determination.

According to the authors the accuracy of the method is about 0.04 per cent. In tests on a tank equipped with a breather bag, the losses determined over a period of five months showed an average of 0.05 per cent, a monthly loss of 0.01 per cent. According to the authors this loss is practically equal to the accuracy of the method. An average for twelve tanks showed a loss of 0.03 per cent per month.

In a tank where air leakage at the eaves occurred, the loss was 0.24 per cent per month. Other tanks in similar condition showed losses of 0.2 to 0.3 per cent per month. These calculated losses agreed well with losses determined by gaging, monthly loss for the unprotected tanks by gage measurement being 0.25 per cent and 0.04 per cent for the breather tank.

In determining displacement losses incident to transfer or moving of liquid, a layer of gasoline was moved up and down in a tank by pumping water in and out, to simulate filling and emptying the tank. Losses on a floating roof tank averaged 0.004 per cent during 18 cycles of filling and emptying. With a standard roof tank the loss was 0.038 per cent for eight cycles, or a comparative loss ten times as great as with the floating roof.

In calculating losses on operations outside the refinery the authors caution that care must be observed in taking samples as variations in this part of the method cut a large figure in the results obtained. A loss difference of 0.2 per cent in sampling was noted when the difference in method consisted in inserting the hose as far as possible into the gallon can in one case and barely inserting the hose tip in the second case. The test in general is considered accurate enough to determine such small losses as occur in the refinery under the conditions given, within the accuracy of 0.04 per cent.

Tanker Explosion Protection

Explosion hazards incident to loading and unloading tankers of cargoes of light distillates or crudes have been greatly minimized by displacement of hydrocarbon gases in compartments by flue gases taken either from the ships funnels or prepared specially by burning a fuel oil and suitably purifying the gases before use, according to a report made by H. H. Hall of California.

The Standard Oil Co. of California has installed on its tankers such a flue gas purification system, and its success is indicated by the fact that no explosion of any moment has occurred on the company's tankers since its installation. Flue gases from the furnace of one of the boilers is taken through a pipe by steam ejectors to a scrubber and cooler tower, where sea water passes countercurrent to the gases in a small bubble tower designed essentially in the same way as an absorption tower. Soot and corrosive gases are removed from the flue gas, which is at the same time cooled to nearly the temperature of the water.

The purified gas is led to each pair of cargo tanks through a main header equipped with lines running to each tank. As a cargo of light oil is pumped out of the tank the gas is

A. P. I. Refining Division Personnel

FOLLOWING are the officers and general committeemen selected to guide the refining division of the institute in 1931:

Chairman, R. C. Holmes, The Texas Co., New York.
Vice-chairman, W. R. Boyd, Jr., American Petroleum Institute, New York.
Secretary, R. P. Anderson, American Petroleum Institute, New York.

General Committee

Elected By Membership

Lloyd Bayer	Associated Oil Co.	San Francisco
Howard Bennette	Western Pet. Ref. Association	Tulsa
C. B. Buerger	Gulf Refining Co.	Pittsburgh
E. M. Clark*	Standard Oil Development Co.	New York
O. L. Cordell	Phillips Petroleum Co.	Tulsa
L. R. Crawford*	Producers & Refiners Corp.	Independence, Kan.
Fayette B. Dow	National Petroleum Association	Washington, D. C.
E. H. Eddleman	American Refining Properties	Wichita Falls
John L. Gray*	Deep Rock Oil Corp.	Tulsa
C. W. Hadley	Vacuum Oil Co.	New York
J. S. Harrison	Standard Oil Co. of Ohio	Cleveland
R. E. Humphreys	Standard Oil Co. of Indiana	Chicago
E. W. Isom*	Sinclair Refining Co.	New York
G. Legh-Jones*	Shell Oil Co.	San Francisco
K. G. Mackenzie	The Texas Co.	New York
E. J. Marston	Texas Pacific Coal & Oil Co.	Fort Worth
Walter Miller	Continental Oil Co.	Ponca City, Okla.
W. L. Stewart, Jr.*	Union Oil Co.	Los Angeles
Chas. L. Suhr*	Pennzoil Oil Corp.	Oil City, Pa.
C. B. Watson*	The Pure Oil Co.	Chicago

Appointed By President

W. M. Irish*	The Atlantic Refining Co.	Philadelphia
K. R. Kingsbury*	Standard Oil Co. of Calif.	San Francisco
C. F. Meyer	Standard Oil Co. of N. Y.	New York
P. M. Miskell*	Empire Companies	Tulsa
J. Howard Pew*	Sun Oil Co.	Philadelphia

*Re-elected

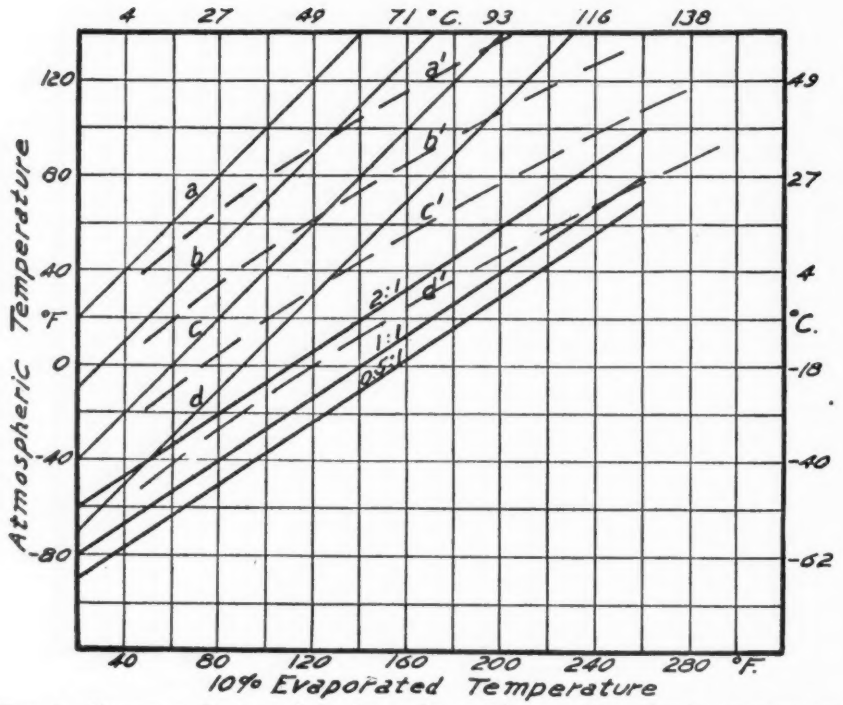


Fig. 1—Curves a, b, c, and d, show the maximum atmospheric temperature at which vapor lock will not occur using propane-free motor fuels which have the ten per cent evaporated temperatures indicated as abscissae. Curves a′, b′, c′, and d′ show corresponding temperatures for fuels containing 2 per cent of propane. Curves marked 2:1, 1:1, and 0.5:1 show the ten per cent evaporated temperatures of fuels which will give easy starting at the atmospheric temperatures shown as ordinates, with the mixture ratios indicated

pumped in displacing the hydrocarbons vapors or diluting them to a mixture so lean in oxygen as to be non-explosive.

Quite as important a feature of the system as that just described is the provision for disposing of the hydrocarbon vapors freed in the tank during loading. By a system of valves the flue gas manifold used during unloading is connected both with the flue gas supply and with a hollow mast. When loading the tank it is connected with the hollow mast by the main gas header line, and the vapors are discharged at the mast's top under conditions of minimum danger. An alarm system installed on the ship automatically shuts off the entire gas system in the event of failure of the steam to ejectors or of cooling water to the scrubber.

A similar system has been tried out with excellent results by the Sun Oil Co. on refinery tanks, bubble towers and other equipment where explosive mixtures may form during plant operation. According to A. E. Pew Jr,. of the three methods for combatting fire hazard the most useful one is the generation of flue gas for diluting these gases below the explosive mixture percentage.

At the Marcus Hook plant fuel oil is burned in a horizontal or a vertical furnace, the gas scrubbed in a bubble plate tower differing from that previously referred to mainly in using two instead of three plates, and is employed to displace inflammable gases in the same way as used in California. A smaller and more compact apparatus is installed on tankers, especially Diesel-powered vessels, for generation and distribution of the gases to tank compartments.

Knock Testing Progress

The surprising and gratifying progress made by the cooperating investigators in developing a standard engine, procedure and method of testing motor fuels for detonation rating reported by Dr. T. A. Boyd, chairman of the committee, indicates that it is reasonable to expect a solution of this problem within the next twelve months. The details of the accomplishments to date on this work were published in the Nov. 12 issue of NATIONAL PETROLEUM NEWS.

A huge amount of work has been carried out, especially in obtaining comparative data of the three main problems with which the committee is concerned, on laboratory results from different installations and different operators. During discussion at the meeting it was explained that results obtained from some 18 or 20 cooperating engines agreed with a variation from the average of 0.5 to 0.7 per cent by the fuel-matching method, which method appears to give most promise of reproducibility.

Tentative agreement has been reached by the cooperators on the standard fuel to be used. This fuel is to be prepared by mixing various proportions of normal heptane with iso-octane until the detonation of the fuel so prepared exactly matches that of the fuel tested. The rating of the tested fuel will then be given as the percentage of iso-octane in normal heptane required to match the unknown fuel.

Dr. Graham Edgar reported that the California Chemical Co. has agreed to send an expedition into the Sierras, up into the region of the snow line, to obtain a quantity of the oleoresin from the Jeffery pine to furnish the industry 500 to 1000 gallons of normal heptane per year for test purposes.

The oleoresin, or "sap" of this variety of the pine tree contains, instead of turpentine as does the longleaf, shortleaf, and other varieties, a high percentage of normal heptane in the volatile portion, federal investigators report. Since this hydrocarbon can be thus obtained in a high state of purity by fractionation, and since iso-octane is easily synthesized by chemical methods, the provision of the standard test fuel in necessary quantities should offer no obstacles.

A great amount of data has been collected in the matter of the best carburetor system, power absorbing medium, and indicator devices, no final agreement has been reached as yet as to the adoption of any one apparatus for any of these purposes. Synchronous motors have shown good results as power absorbing medium, but do not take the burden of speed regulation off the operator.

Acoustimeter Shown

A unique, and apparently satisfactory device for indicat-

ing the relative knock intensity of a fuel in operation was discussed and demonstrated by Dr. Roesch of Armour Institute, who has been cooperating in the investigation. This consists of a galvanometer, the needle of which is used to show the intensity of the knock by electrical means.

A magnetophone picks up the sound of the knock and transmits it through radio amplifier tubes to a therocouple connected to the D. C. galvanometer. According to Dr. Roesch's report, the instrument shows great sensitivity toward small differences in intensity of detonation, and the results obtainable are reproducible with proper care in operation of the entire test.

A group of British technologists, composed of A. E. Dunstan chief Technologist of the Anglo-Persian Oil Co., and honorary chairman of the committee on refinery technology of the American Petroleum Institute, F. H. Garner of the Anglo-American Oil Co., and J. Kewley of the Asiatic Petroleum Co., are cooperating with the American committee in this work. This joint effort in a common problem is to be commended and should very possibly result in the adoption of a universal method for knock determination.

The work of the Bureau of Standards, of the National Gasoline Association, of other investigators was summed up in a paper by Graham Edgar, J. B. Hill and T. A. Boyd by stating that, if the A. S. T. M. distillation curve is known, its characteristics regarding the following five important factors can be approximately calculated: ease of starting a cold engine; vapor lock; ease of acceleration; ease of complete vaporization; and tendency to crankcase dilution. All of the findings of these investigators have been published in NATIONAL PETROLEUM NEWS in the past; the authors however, presented the data in the form of curves which simplify the study and calculation and the understanding of the relationships which have been determined by research.

Fig. 1 shows the conditions under which various fuels of differing ten per cent evaporated points which do not give trouble from vapor lock or from hard starting, at different temperatures of the fuel system. To illustrate the meaning of the graphs, the presenting author Dr. Edgar, stated that any fuel with a ten per cent evaporated above the line marked 1:1 (air/fuel ratio), and to the right of the diagonal line marked "a," would, in a motor the fuel system of which is not heated appreciably above atmospheric temperature, give neither vapor lock troubles nor hard starting. Fig. 2 shows the air fuel temperatures necessary for complete vaporization of the fuel at different air fuel ratios, as functions of the 90 per cent evaporated A. S. T. M. temperatures.

Airplane Diesels

Means of starting the Packard Diesel airplane motor when cold was explained by W. H. Graves of that company. Glow plugs, which resemble a spark plug but have no gap, are employed to start ignition when fuel and motor are cold. Heat is obtained by resistance wires on the plug and in the cylinder.

The speaker discussed the requirements of the Diesel engine as to fuel characteristics. According to the company's experience the engine requires a distillate fuel of pour point and viscosity low enough to flow to the mechanism at temperatures encountered in service, flash of 150 F., and no acidity or grit. Fuels of the following test properties have given satisfactory service in use, he stated:

Gravity at 60 F., 37 to 42 deg. A. P. I.

Flash point, 150 to 180 F. open cut.

Color, White to 1½ N. P. A.

Viscosity at 100 F., 32 to 35 Universal Saybolt, at 0 F., 45 to 50 Universal Saybolt.

Distillation:

Initial, 348 to 430 F.

End point, 490 to 600 F.

Pour point, —30 to —80 F.

As the result of an exhaustive investigation of the effect of acid concentration, treating temperature and volume of acid used in treating oils, H. M. Weir, W. F. Houghton and F. M. Majewski of the Atlantic Refining Co., have determined the influence of these variables on the color, gravity, treating loss, viscosity change, and other properties of the finished products. The authors presented a large amount of data to show the results achieved, and from these data they have drawn the following conclusions regarding the major effects produced

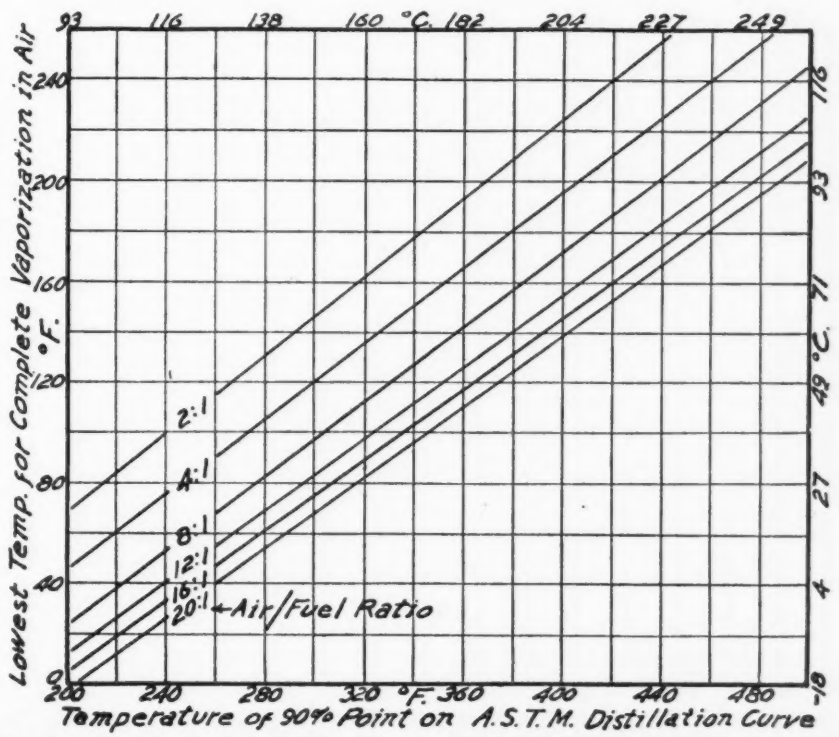


Fig. 2—These curves show the lowest temperature at which complete vaporization in the carburetor will occur with fuels of the 90 per cent temperatures given as abscissae, for the different mixture ratios indicated for each curve

by varying the treating conditions.

"On a weight basis, 93 per cent sulfuric acid is superior to 98 per cent as a reagent for the removal of color from solar reduced stock. The sequence of acid concentrations in their order of decreasing efficiencies as reagents for color removal (restricted to solar stock only) is 93 per cent, 98 per cent, 91 per cent, 86 per cent, 83 per cent, and 75 per cent. For naphtha flux bottoms, 98 per cent acid is superior to lower concentrations.

"As the concentration of the treating acid increases, the oil loss increases. The loss is primarily a function of the concentration of acid rather than the weight of sulfuric acid in the acid used.

The effect of treating temperature on solar reduced stock with all concentrations of acid is not very pronounced. For normal amounts of acid up to 2 per cent by volume, the color changes but slightly in the temperature range from 60 F. to 120 F. For volumes of acid in excess of this amount, lower temperatures produce more favorable results, providing the viscosity of the oil is reduced by fluxing with naphtha or water white. The oil loss does not change with variations in temperature.

"As the volume and concentration of the acid increase, the A. P. I. gravity of the finished solar oil increases. The first increment of acid (up to 1 per cent by volume) produces a proportionately larger increase in A. P. I. gravity than the larger volumes of acid. Stronger acids produce greater changes in gravity than the weaker acids.

"As the volume and concentration of treating acid increase, the viscosity of the finished solar stock decreases. This change is almost a linear function of the acid volume. The effect of the first increment (up to 0.5 per cent) of 75 per cent acid, however, is to increase the viscosity; thereafter additional acid decreases the viscosity.

"The removal of color with various concentrations of acid does not appear to be definitely related to changes in gravity, for the greatest color removal per unit volume of acid is not accompanied by the greatest change in gravity.

"The heat of the acid-treating reaction is directly proportional to the oil lost by reaction in the treating, and for any given oil loss the heat of reaction is practically equal for all concentrations of acid.

"The change in gravity is directly proportional to the oil treating loss, and for any given loss the change in gravity is practically equal for all concentrations of acid.

For 93 per cent treating acid, the acid lost or consumed by reaction with solar reduced stock various from 1 to 3.5 per cent of the initial weight for treatment ranging from 1 per cent to 7 per cent by volume of treating acid. The acid consumed is not proportional to the color removed. The loss due to oxidation, as indicated by the formation of sulfur dioxide, varied from 0.06 per cent to 0.22 per cent."

Fig. 3 illustrates effectively the advantage obtained from using 93 per cent acid in treating, so far as the removal of color is concerned.

Dr. Hugh S. Taylor, reporting on the progress of A. P. I. Project No. 40, the study of sulfur compounds in petroleum, stated that the addition of hydrogen gas to the reaction mixture in removing pure sulfur compounds from naphtha solutions increased the percentage of sulfur removed, when operating with a nickel catalyst. An iron catalyst also shows the ability to remove sulfur compounds but in less degree than nickel. The author finds that the first passage of the vapors over the catalyst is by far the most effective, successive passes showing a decreasing efficiency in this respect.

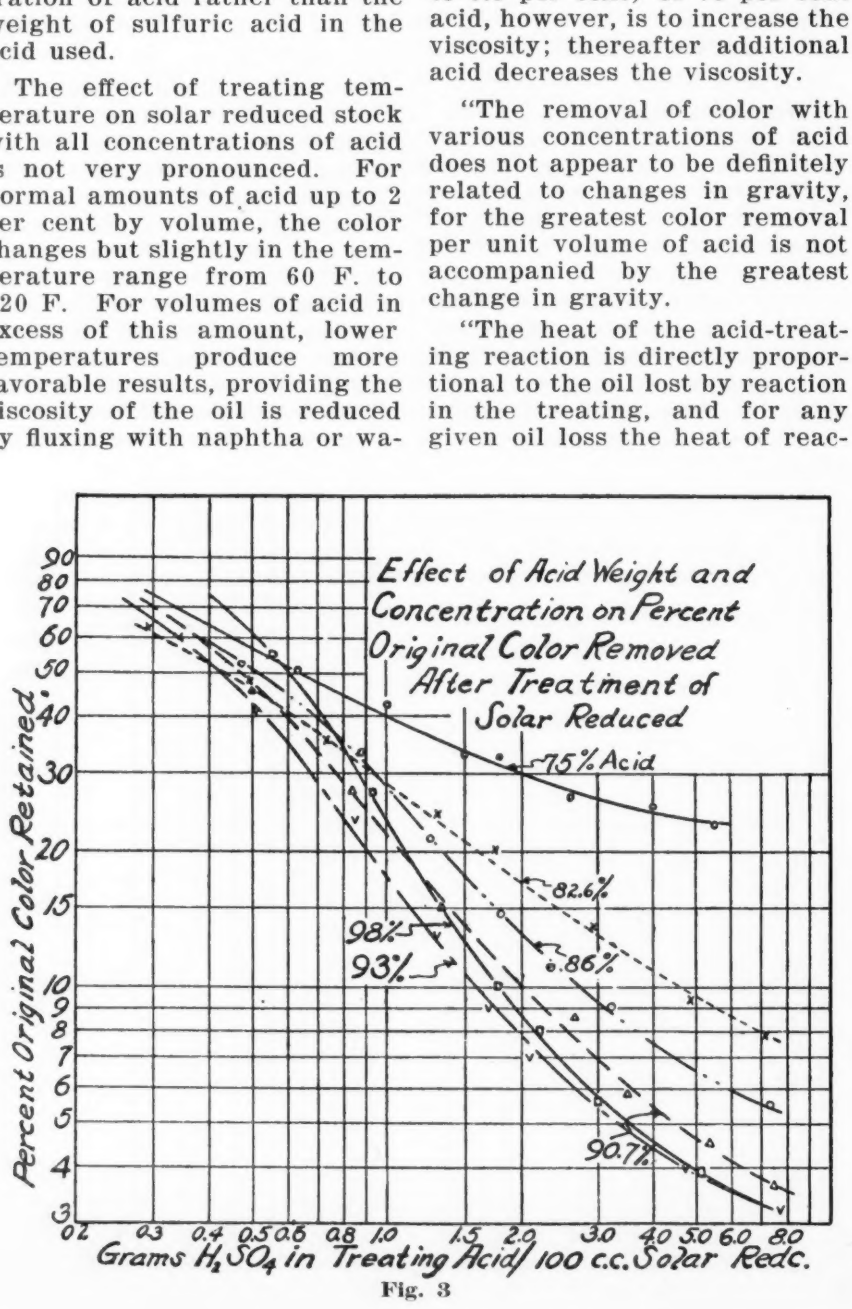


Fig. 3

To Install 10,000-Bbl. Tube and Tank Unit

LOS ANGELES, Nov. 14.—Associated Oil Company recently awarded a contract for the erection of a tube and tank type cracking plant at the Avon refinery near Martinez.

The cost of the plant will be approximately $2,000,000 and its construction is a part of the company's proposed expansion program.

Scheduled to be in operation by June 1, 1931, the plant will be a complete unit consisting of cracking furnaces and bubble towers, treating plant, rerun still and power plant.

Year's Progress in Production Practice Due to Better Gas Utilization

By William F. Lowe
N. P. N. STAFF WRITER

CHICAGO, Nov. 13 PROGRESS in production practice the past year was discussed at group meetings of the production division of the institute. Reports were made on individual and group research into major problems concerned with the mechanics of production and with corrosion of equipment.

In reviewing the improvement in production practice, W. W. Scott, Humble Oil & Refining Co., Houston, called attention to the increased efficiency with which producers are handling their properties. The trend in methods is toward a greater use of the natural gas energy connant to the pay horizon for more economical and efficient lifting of oil. Field men as well as executives are behind the move.

According to Mr. Scott, most of the important changes in production practice have been due to utilization of natural gas for this purpose. He gave as an example the Sugarland oil field of Texas, where 85 per cent of the gas produced has been returned to the underground reservoir. As a result the original rock pressure has shown but a small decline. At Yates it is estimated that the tubing of wells brought a 33 per cent saving in the amount of gas produced.

On the subject of proration Mr. Scott stated that the practice of open flow gaging was detrimental to a pool. Such a system can have but one result. It not only damages the mechanical condition of the well but speeds up water encroachment.

In discussing the mechanics of oil well pumping, H. E. Dralle, Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa., stressed the relationship of prime mover and counterbalance. He presented a detailed analysis of data obtained from exhaustive tests, to show the importance of this relationship. Though some of the conclusions were theoretical, they furnish a basis for analytical calculations of stresses and power requirements of oil well pumping equipment.

The importance of casing programs was made evident by the paper of J. R. Gignoux, Shell Oil Corp., Los Angeles. He brought out that the unfavorable selection of sizes, or the improper setting of casing, could result in a greatly increased cost for drilling operations. Since the cost of casing ranges from 23 to 35 per cent of the total cost of drilling a well, avoidance of the necessity of setting an additional string by the detailed study of actual requirements would materially reduce the operating investment.

Mr. Gignoux indicated the practice of underreaming is showing a rapid decrease and that the newer deep pools have been developed almost entirely without it. The trend is bound to be beneficial for the drilling time is shorter and fewer fishing jobs are resulting, he said. Conditioning a hole previous to casing by this method is not as advantageous as has been supposed, particularly if the work is not thoroughly carried out.

IN THE study of some 200 wells in California fields a new clearance ratio method for proportioning sizes in casing programs was developed. This work led to the recommendation for a uniform method of pre-determining casing sizes and weights in any particular field. Such a program could only come as a result of the study of many fields and conditions.

In presenting a discussion on the "Water Supply and Treating Methods for Modern Oil Fields," W. K. Whiteford, Barnsdall Oil Co., Tulsa, showed that the adequacy of the supply was not the only prime requisite, but that the quality of the water had much to do with successful and economical operation.

THE removal of suspended matter and the reduction of hardness by treatment on the lease has resulted in great saving in a number of operations. Boilers, lines and gas engines have become more efficient when the water used in them has been first treated. Non-scale forming water is also essential in the operation of condensers and in the cooling coils of a spray tower if the heat transfer rate is to function properly. There are several methods in common use for preparing water for use in oil field operations, and a study of the requirements aids materially in determination of the method best suited for the individual purpose, the speaker reported.

Plans for future operations presented in the various committee meetings of the production division, which preceded the general sessions of the group, included the suggestion that paid engineers of the institute be assigned to write future reports. No action was taken on the proposed plan but the idea was rather widely discussed. It was thought that these men, devoting their time to gathering data, could present more comprehensive reports than are now available, providing that the various oil com-

panies would co-operate. The idea received considerable support though here seems to be a number of difficulties in the way of immediate action.

The subject of corrosion was given considerable attention. The various reports, and the papers made the increasing value of the present research program very evident. The financial return to operators in general, according to the compiled conclusions, more than compensates for the time and effort taken in making them.

New Code Provides Standards For Handling of Crude

By Paul Wagner

N. P. N. STAFF WRITER

CHICAGO, Nov. 14

A TENTATIVE code covering the measuring, sampling and testing of crude oil was approved and ordered published at the Chicago meeting, Nov. 13, of the American Petroleum Institute.

Its object is the unification of a wide variety of methods and practices formerly employed in the industry. In instances where it has not been possible to obtain general agreement on a single method or practice, exceptions have been noted or in some cases alternative methods described.

A copy of the tentative code issued by Carl A. Young of Dallas, as secretary of the Institute's division of Production, says the necessity for this procedure is obvious upon study of the widely varying conditions under which crude oil is produced in various parts of the country.

"A large number of companies representative of all parts of the country have cooperated," it is pointed out, "in preparation of the code and it is hoped that it will be generally used as a basis for company procedure; and that it will be of material assistance in promoting uniformity in handling crude throughout the entire country.

"Where practices in the different fields do not agree the code may also have value in promoting a higher degree of regional standardization."

Provisions of the tentative code extend from the setting up of specifications applying to tank measurements and calibration through the various processes of gaging, sampling and testing.

Recommendations are made with regard to temperatures as they affect accuracy in gravity adjustments; gravities are to be determined under specified applications of methods of the American Society for Testing Materials; and water and sediment tests are set forth.

The desirability of correcting crude oil volumes to 60 F., as a standard temperature base is generally recognized. It was not found practicable at the present time, however, to make this correction throughout the country; and, in some districts, all dealings are based upon the volume at naturally existing temperatures.

It is recognized as a fundamental and ideal proposition that deductions should be made for all water and sediment because the purchaser is interested in buying only pure oil. This is now done by arbitrary percentage deductions in some districts. It is recommended that full deduction be made for all water and sediment where practicable to do so and in those districts where not practicable that an arbitrary percentage deduction be specified.

No national standard is recommended for deductions covering evaporation and other losses incidental to gathering and transporting the various grades of crude oil. Sufficient information had not been available on which to allocate and distribute correctly such losses.

The report of the sub-committee on production corrosion covering corrosion of production equipment, presented by Stanley Gill of the Gulf Oil Corp., dealt with the distribution and the nature of corrosion as it effects equipment used in the production of petroleum. Numerous types of corrosive action were considered.

In discussing soil corrosion, Joseph F. Putnam, Standard Oil Co., of California, San Francisco, described a simple ammeter voltmeter test that may be used to predetermine the corrosivity of soil in which iron is buried. In general, the method gives a close correlation to the corrosion experience on buried pipelines. It does not work so well where the electrical resistance of the soil is very low, however, for steady long line currents of considerable magnitude are set up which materially affect corrosion. Such currents are those which flow for several feet before leaking off into the soil. An odd fact in connection with these particular currents is that it is not possible to predetermine either their direction or extent.

In speaking on the subject of pipe protection, W. H. T. Thornhill of the Underground Pipe Protection Institute, indicated that the effectiveness of any coating depended on its application. Trained field forces are absolutely essential to the proper protection of pipelines with any coating. Often engineers do not take the trouble to see that the expensive materials bought for the purpose are applied in the best possible manner. The result has been a considerable amount of adverse criticism concerning its merits due to its failure to prevent corrosion.

The proper handling of coated pipe should also be emphasized in the training of field crews, he said. There is still plenty of room for improvement in the way some pipeline companies treat an insulated line. Time should cease to be a factor in the laying of such a line if the operators are to realize on their additional investment. The coatings are economically justified by the increased life of the pipe providing precautions are taken in its use.

Theory and Practice of Unitization

Its Present Stage of Development Is Discussed Along With the Need of Standard Forms of Contracts and Standard Methods of Working Out Members' Fair Share of Revenue and Expense

By Lawrence E. Smith

N. P. N. STAFF WRITER

CHICAGO, Nov. 13

UNIT development of oil pools, endorsed as sound policy by directors of the American Petroleum Institute last year, was accorded prominent place on the program of the division of production this year. In afternoon and evening group sessions Wednesday, this and kindred subjects were discussed by five speakers.

Judge C. B. Ames, vice-president The Texas Co., found several things to mention under the heading of "What's the Matter With the Petroleum Industry." He recited the economic maladjustment phases with which all units of the industry are sadly familiar today, all of which he compressed into the one statement that oversupply is the cause of all the trouble.

He gave a summary of the proration methods used by the several states. "In Oklahoma," he said, "an effort has been made by law not only to prevent physical waste but economic waste. In that state, waste as such is prohibited by law and waste incident to the production of crude oil in excess of market demand is declared unlawful.

The corporation commission is given broad power to prevent waste by ascertaining the market outlet for the state as a whole, for the various producing areas of the state, and apportioning the market outlet between these areas and between the several producers of any given area. This statute has recently been subjected to attack in both the state and federal courts of Oklahoma and has been upheld by both.

"In Texas the law prohibits physical waste but specifically excludes economic waste from consideration by the railroad commission. It contains provisions relative to preventing discrimination and requiring purchasers to purchase ratably. The railroad commission is given broad powers of enforcement and under the act . . . has found that the market outlet for Texas is approximately 750,000 barrels per day. . . . This order of the commission is now under attack in the courts.

"Last year California passed an act prohibiting the unreasonable waste of gas and setting up machinery for administering the law. This act has not yet been applied as litigation has held it in abeyance. . . .

"The New Mexico statute permits agreements, but does not otherwise prevent overproduction. Under the statute, the Hobbs pool is under proration. . . .

"AS A result of the activities in these and other states, the actual production is now less than 2,400,000 barrels and is approximately in balance with demand. However, we started into the year with 682 million barrels of crude and refined in storage and that is approximately the figure today. This enormous quantity of storage oil and uncertainty about proration are the immediate causes of the demoralized market for crude. The proration orders and agreements are all for short periods of time. It is probable they will be renewed but not certain, and therefore, the overhanging potential threatens the stability of the situation and jeopardizes the price structure, notwithstanding the great good that has been accomplished."

As to unit development, it is not an effective remedy for existing evils, but can be used as an alleviation of them, Judge Ames said. He stated that progress in this respect can be made only gradually and by persuasion. It must rest upon "consent and not compulsion," for the reason that, under the law, the surface owners has the right to drill on his own land and this right, Judge Ames said, cannot be taken from him.

JUDGE AMES sees an avenue of relief in the prohibition of gas wastage. He gave a figure of two billion feet daily which is going into atmosphere, in four states. His estimate was a wastage of 600 million feet in California, 400 million in Oklahoma, more than 500 million in the Texas Panhandle and 250 million in West Texas and New Mexico.

Aside from the saving of this gas for fuel purposes, Judge Ames said it would reduce oil production. (This phase of his address was published in Nov. 12th issue of NATIONAL PETROLEUM NEWS, Page 57).

Judge Ames doubted the efficacy of an oil tariff. "If the effect of the tariff is to exclude foreign oil, it forces that oil thus excluded into foreign markets," he said, after pointing out that in 1929 the United States exported 54 million barrels more than it imported.

A contribution on the practical aspects of unit operation was made by John P. West, Prairie Oil & Gas Co., Tulsa, who has been closely identified with the participation of that company in co-operative effort. He said that a point that is too little stressed in all the dis-

A. P. I. Production Division Personnel

FOLLOWING are the officers and general committeemen selected to guide the production division of the institute in 1931:

Chairman, Robt. R. Penn, Penn Oil Co., Dallas.
Vice-chairman, W. R. Boyd, Jr., American Petroleum Institute, New York.
Secretary, C. A. Young, American Petroleum Institute, Dallas.

General Committee

Elected By Membership

D. S. Bushnell*	Northern Group of Pipelines	New York
O. D. Donnell*	Ohio Oil Co.	Findlay, Ohio
A. W. Peake	Standard Oil Co. of Indiana	Chicago
W. S. Fitzpatrick*	Prairie Oil & Gas Co.	Independence, Kan.
E. H. Salrin	Tide Water Oil Co.	New York
Wirt Franklin*	Wirt Franklin Oil Co.	Ardmore, Okla.
H. M. Stalcup	Skelly Oil Co.	Tulsa
F. A. Leovy*	Gulf Production Co.	Pittsburgh
M. E. Lombardi*	Standard Oil Co. of Calif.	San Francisco
Alvin Richards	Pure Oil Co.	Tulsa
H. R. MacMillan*	MacMillan Petroleum Corp.	Los Angeles
E. A. Landreth	Landreth Production Co.	Fort Worth
E. T. Moore*	Simms Oil Co.	Dallas
W. M. O'Connor*	Atlantic Refining Co.	Philadelphia
R. Ogarrio*	The Texas Co.	New York
H. H. Hill	Standard Oil Development Co.	New York
Forest D. Dorn	Forest Oil Corp.	Bradford, Pa.
H. R. Straight*	Empire Companies	Bartlesville, Okla.
U. de B. Daly	Shell Petroleum Corp.	St. Louis
C. E. Crawley	Sinclair Cons. Oil Corp.	New York

Appointed By President

W. N. Davis*	Phillips Petroleum Co.	Bartlesville, Okla.
W. S. Farish*	Humble Oil & Refining Co.	Houston
D. J. Moran	Continental Oil Co.	Ponca City, Okla.
J. Edgar Pew*	Sun Oil Co.	Philadelphia
L. P. St. Clair*	Union Oil Co. of Calif.	Los Angeles

*Re-elected

cussions of the subject is the fundamental simplicity of unit operation. It is merely a multiple partnership—the most elemental of economic relations.

Certain positive steps must be taken by the industry as a whole to promote unit operation, Mr. West said. " . . . the complicating factor is that there are many kinds of partnership. There are probably no two concerns whose partnership contracts do not differ in minor ways. Essentially they both have fair contracts, and in actual application there would likely be little difference; but both, through long practical usage, have come to prefer their own personal contracts. The essential need in encouragement of unit operation is for fair contracts that are universally accepted.

"Land departments need standard, endorsed and approved forms of contracts. Those who have worked on committees on standardization of oil field equipment will recall the problems with which they were confronted, and the land departments of companies are confronted with the same type of problem in the miscellany of individual unit operation contracts which make of each transaction a separate problem of persuasion.

"While recognizing each individual concern's preferences in simple partnership, just as each individual company prefers its own lease forms, the need is for forms of contracts for unit operation as generally accepted as the 'Producers 88' lease form, so that a common meeting ground for concerns to conduct negotiations for unit operation will be had."

Dr. George Otis Smith, director of the U. S. Geological Survey, who as member of the technical advisory committee of the Federal Oil Conservation Board has been active in publicly promoting unit development, spoke at the evening session Wednesday. The arbitrary division of a natural reservoir of oil into small tracts, each compelling development when the other becomes productive, is a condition opposed to sound economics, nature itself and the recent trend of judicial opinion, Dr. Smith said.

"Compare oil producing with timber cutting and see how this unprotected ownership of a migratory mineral leads to disregard of the economic law," said Dr. Smith. "As an owner of timber land if I learn my neighbor is going to make a big cut this winter, I will hesitate long enough to estimate next spring's market demand for logs from that region, with the probable result that I will defer my own operation until I see a better chance in a profitable market.

"However, if I am an owner of oil land and hear my neighbor is to start a drilling campaign, I do not hesitate a moment in order to weigh questions of supply and demand I rush my rigs and casing to the field. Of course I hope there may be a demand for my oil and, with the ingrained optimism of the oil man I pray for prices not too low to include a profit, but whether or no, I fall in step with the jazz tempo of the oil man's marching song, 'Keeping Up with the Offsets.' As a lumberman I have the opportunity to obey the law of demand and supply; as an oil operator I am forced by the unfortunate conflict of natural law and man-made statutes to disregard the plan decrees of economic law. . . ."

T. E. Swigart, Shell Co. of California, outlined problems that have come up in the long effort to put the Kettleman Hills field on a unit basis.

"Fundamentally," he said, "every member is entitled to the share of the total oil, gas and natural gasoline produced from a field that the productivity of his property for these products bears to the productivity of the field for the respective products at the time the unit company is formed. Just how to determine these proportions is one of the most difficult engineering problems in unit operation.

"The simplest method of determining members' interests and the one most often suggested is on the basis of proved acreage. This eliminates, to a great extent, controversies over the relative state of productivity of oil, gas and gasoline

in the different parts of the field. It may be argued that operators on the crest of the producing structure have proportionately more natural gas, and possibly more casinghead gasoline than their neighbors on the flanks and, conversely, operators on the flanks may have more oil than operators on the crest, and therefore the original values of their respective holdings are quite different.

"It must be recognized, however, that each has valuable assets which can only be fully realized by co-operative action. The operator with most oil under his lands needs the gas energy, of which his neighbor may have a surplus to enable him to effect greatest possible ultimate recovery. The man with most gas needs a share of the oil revenue because, with reasonable field oil production to insure a stable market, the oil is immediately salable and of considerably greater value than the gas that accompanies the oil.

"Also, the gas produced with the needed oil may be greatly in excess of market demand and, therefore, of little value at that time. Great differences in productivity and values of different properties in a field are often more fancied than actual and the simplicity of determining interests on the basis of productive acreage commends this method.

"The Van field plan and the original Kettleman plan provide for membership interest based on proved acreage which eventually will be weighted for productivity. Until enough development work can be done to provide necessary data for weighting, one percentage figure, based on proved acreage, is established for dividing the production or revenues and the expense among members.

"The Kettleman plan provided that ultimately three percentages would be established for dividing oil, gas and natural gasoline productions. These would depend, first, on proved acreage and, second, on engineering estimates of the proportion of recoverable amounts of these products under each individual's lands at the time of incorporation of the unit association to the total amounts of such products recoverable from the entire field.

"Because of its intangible nature, no weight was expected to be given to the usefulness of one of these products to the other in field practice. Also, it was not expected that cognizance would be taken of the effect of market demands for one product in the waste due to limited demand of another product which naturally accompanied the first. . . .

"Practically all unit plans provide for allocation of expense to members in the same proportion as their interests in the production from the unit area. In the development of the first Kettleman plan, however, it developed that certain operators wished to provide for weighting of expense as well as for productivity. These operators held, for example, that wells near the crest of the structure would be shallower than those near the edge of the field and should be cheaper to drill. Moreover, some edge wells might develop water troubles or for that matter be dry holes and the operator near the crest under competitive methods would not have these risks.

"They also contended that crest wells would flow longer and would produce oil without water or emulsion longer than edge wells and that production and dehydrating expenses would be less. Also, considering that wells on the crest might produce most gas and natural gasoline, the operators originally owning such acreage should pay the greatest portion of the capital and operating expense incident to gas gathering, gas sales and gasoline manufacture.

"While percentages weighted for expense theoretically give greatest assurance of equity, still considered with weighted factors of productivity, they lead to possible complications in accounting that are almost staggering. Consider that a 'stop structure' operator . . . might have the full thickness of productive oil zone under his land. His oil factor might be penalized slightly if a gas accumulation were present . . . but even then he would have a relatively high oil weighting factor and would also have a high weighting factor for gas and gasoline productivity.

"In such a field as Kettleman, it would be necessary to raise the weighting factor of such operator . . . because of light oil production from his lands as compared to heavier oil in the flanks, which adds another complication. Considering expense this operator . . . . would be assigned a high gas expense factor because of large volume to be handled and a low oil expense factor because of expected natural flowing wells and possibly because of shallower wells than on the flanks.

"The man with property low on the flank would have almost opposite factors. He might be charged with an extra large expense factor because he would have to drill some twin wells. . . . These complications in working out each member's fair share of revenues and expenses are enough to warrant serious consideration of a flat rate percentage based on acreage even though the weighting system theoretically gives greater exactness in allocating revenues and expense. . . ."

Martin Van Couvering, of Los Angeles, contributed a paper which showed the results that might have been obtained if Sante Fe Springs field had been developed as a unit.

A.P.I. Research Program To Be Continued

CHICAGO, Nov. 12.—Continuation of the fundamental research program of the American Petroleum Institute was authorized by the board of directors during the annual meeting. Contributions from oil companies totaling $100,000 per year will be sought for that purpose.

The research program now under way which expires June 30, 1931, has been financed by gifts of $250,000 each from John D. Rockefeller and the Universal Oil Products Co. These gifts were made nearly five years ago.

Research projects largely have been carried on in laboratories of various universities of the country, the problems to be studied having been selected by institute committees.

A Proven Plan

for Increasing Sales through Stations and Dealers

THIS method, used under strict test conditions, in a metropolitan market, caused a substantial increase in the gallonage of one company...*in a period when ALL of the four other leading companies LOST* gallonage.

THE PLAN is simplicity itself. In fact, it is *straight advertising*—but with what a difference! It differs from ordinary gasoline or oil advertising in two particulars:

1.. The accuracy with which it delivers the selling message most certain to be successful;

2.. The accuracy with which the amount of selling pressure is gauged against the size and character of the job to be accomplished.

So accurate was the method in this instance that the gallonages of four out of the five leading companies were correctly forecast; and the company which used this plan was the only one of the five that secured an increase—a most substantial accomplishment, and at a cost that was entirely in line!

The advertiser writes us: "Our contact with you has been profitable to our company. Your service has been exceptionally efficient. The research work has been particularly original, and we feel that you understand the gasoline market as well as anyone with whom we have been in contact."

Could you write such a letter about *your* advertising agency? Can you point to actual, profitable gallonage increases, directly traceable to your advertising? Can you say with certainty what sales approach is most successful with your products, or exactly *how much* advertising is "enough" for your purpose? If not, this agency can help you.

The seasoned services of this group are available to a refining company with national marketing problems—or to one with semi-national distribution but with expansion on its program.

If you need this tested method of market measurement and copy analysis, we shall be glad to show you the plan, and proof of the results. This will be done in an entirely ethical way—from semi-public records, without revealing any confidential figures—and with the full permission of the advertiser mentioned above.

A telegram or letter will bring prompt response.

Beecher-Cale-Maxwell

INCORPORATED

Advertising

Twelfth Floor—International Building—St. Louis, Mo.

An organization of experienced advertising and merchandising men with a distinguished record for "direct hits."

Seven New Completions Add to Growing Output of Long Beach Field

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Nov. 14

SLIGHTLY more than nine years after its discovery the Long Beach pool in Los Angeles county continues to be the source of surprises to California operators. Since Shell Oil Co. completed Alamitos No. 1, in June of 1921, the field has yielded nearly half a billion barrels of oil and threatens to outlive by many years Santa Fe Springs the other major Los Angeles Basin field.

During the past three or four months leasing and drilling activity on the south flank of Signal Hill proper and in the Los Cerritos extension has been at a peak. Shallow producers—bottomed between 3000 and 6000 feet—have been deepened with remarkable success.

The completion of one or another of these upper zone wells usually started the ball rolling in the closely congested town-lot areas and has resulted in several extensions along the structure's flank where the lower horizon extends beyond the shallow pay.

Of the two principal centers of activity at Long Beach, that along the south slope yields the larger completions. Even at this late period it is not uncommon to bring in a well for between 2000 and 3000 barrels daily.

However, while slightly lower in initial yield, new wells in the Los Cerritos area prove to be consistent producers. They are invariably good for between 500 and 100 barrels if completed according to good drilling practice. Occasionally a project taps a small unexploited pool to yield better than 2000 barrels per day.

During the past week seven completions at Long Beach added 6097 barrels of flush production. Due to curtailment there is very little natural decline among the old producers so that total production from 772 wells was 104,230 barrels or about 4000 barrels in excess of the previous week.

It is estimated there are approximately 34 wells due for production tests within the next three or four weeks, that will combine to hold the field's output above 100,000 barrels per day.

Several extension wells in the Los Cerritos area are being watched with interest. A test by George Barnes, an independent operator, is expected to prove the commercial possibilities of nearly 400 acres in this locality. It is the intention to drill this project to about 7750 feet to test the Gem and Colby sands responsible for production in this area.

Playa del Rey was the other area being watched by Los Angeles Basin operators the past week. Toward the close of this period production from 81 wells was nearly 42,000 barrels daily. Of 109 drilling wells there were about 90 that were thought to be nearing the pay, the rest were either idle or abandoned.

Field scouts predict this field, on the outskirts of Venice, will be making in excess of 55,000 barrels by Christmas unless proration becomes operative here. Production by zone at the close of week ended Nov. 14 was as follows:

	Bbls.	Wells
Upper Zone	25,624	45
Lower Zone	16,133	36

Umpire Neal Anderson spent the greater part of the past week attempting to sign up the Playa del Rey operators on a proration measure. His success had been only about 75 per cent perfect as the week closed and there appeared little hope of agreement with the promoter-type operator.

An important factor in the del Rey situation concerns the probable price to be posted by major purchasing companies for the sulfurous crude. Meetings held during the week indicated a price of between $0.75 and $0.80 would be offered in the event 90 per cent of the production agreed to curtail.

Completions of the upper sands continue to maintain a steady output although they rarely reach 800 or 900 barrels per day, even during the first few days. Projects bottomed in the lower zone yield upward of 2000 barrels per day but edge waters are causing many on the flank to show cuts of 35 to 55 per cent.

Within the week Richfield

Kettleman Operators Sign Unit Plan

LOS ANGELES, Nov. 14.—Although specific details have not been announced it is understood a workable plan has been formulated to govern future development of the North Dome, Kettleman Hills.

Kettleman Hills North Dome Association has been incorporated for the purpose of handling the two-unit plan of cooperative development that is now being circulated among the interested operators for their signatures, after which it will go to the secretary of the interior for approval.

If all the preliminary work goes over without a hitch, it is expected actual drilling under the plan will commence soon after the first of the year as an act of congress gives the department of the interior until Jan. 31 to accept a suitable plan for exploitation of the field.

Oil Co. is expected to make a production test of its deep hole in the North Belridge play. Although the well is bottomed in the sand discovered by the Belridge Oil Co.'s No. 15, it is over 600 feet lower on the structure.

Extremely high gas pressures similar to that encountered in the Belridge well nearly caused a blowout while the crew was reaming out preparatory to running casing. Before drilling was stopped about 55 feet of saturated oil sand has been penetrated that responded to acetone and ether tests.

Further to the south near the Buttonwillow gas field, the Nordon Corp. Ltd. is below 5150 feet in its deep test of Sec. 7-29-24. Engineers do not expect to pick-up the theoretical oil sand above 6000 feet, although cores give it a position approximately 200 feet higher on the structure than previous shallow tests in the area.

Pressure of the gas is said to be increasing with depth and some difficulty is experienced in keeping the well under control. Even if oil is not found to be increasing with depth and at the lower depths the well could be added to numerous other projects in the Buttonwillow field capable of yielding commercial gas production.

The Ritchie well on the floor of the San Joaquin Valley, reported last week to have penetrated an oil sand, is reported drilling ahead following the recovery of a core barrel lost early in the week. Here, too, heavy gas pressure was said to be hampering operations. Analysis of the oil showings indicates crude of 26 to 30 gravity, much higher than that found in the nearest producing area of Wheeler Ridge.

Richfield Wins Title To Elk Hills Leases

LOS ANGELES, Nov. 14.—The United States District Court, Nov. 11, dismissed a suit brought by the government to have three leases, held by the Pan American Petroleum Co.—now Richfield Oil Co.—in the Elk Hills Naval Reserve, declared invalid and canceled.

Under the decision rendered by the Court Richfield can proceed with development work on the lease and need not account to the government for the oil and gas taken out.

The leases under question, involve approximately 660 acres on sections 1, 31-24 and 2, 31-24 in Kern county. They were issued separately from the principal lease covering the remainder of the Naval Reserve which was canceled by court action.

In its suit the government claimed the leases were obtained by fraud through an asserted conspiracy between E. L. Doheny and former Secretary of the Interior Fall. The defense countered with the contension that the leases were ratified by congress for the purpose of offsetting the drainage by wells on adjoining patented land.

Court Delay Hampers Texas Prorating

HOUSTON, Nov. 17.—Failure of the Travis county district court to act on the merits of injunction proceedings against proration as applied to individual properties in various Texas fields has served to delay settlement of problems surrounding southwestern curtailment. Meantime, production averages will show increases from their early November lows.

District Judge Calhoun, in the case brought by the Danciger Oil & Refining Co., affecting Panhandle properties, held the recently existing temporary injunction against proration in force until the case could be reached in its turn on a "crowded calendar." Merits of the case will not be decided until then. Meanwhile, the Danciger properties may be operated outside of the prorating program.

In the Darst Creek case, affecting properties of the Louisiana Oil Refining Corp. in the Luling fault zone of central south Texas, court action also was delayed. The field will be produced at between 55,000 and 60,000 barrels daily instead of the 30,000 barrels contemplated in a state order announced as effective in November.

Temporary injunctions obtained by Sunray Oil Co., of Tulsa, in the Panhandle, and Young Bros. & Alexander, in Young county, North Texas, continue to permit exploitation outside of proration. It had been previously announced the affected companies, whose cases have not been called up, would abide by decision on the Danciger hearing.

Ajax President Goes To Irak Fields

TULSA, Nov. 15.—Dinner given in St. Louis Friday night was attended by employes of the Ajax Pipe Line Co. (Standard Oil Co. of New Jersey subsidiary). It was in celebration of the rapid progress that has been made in constructing the system from Oklahoma to Wood River, Ill., and was at the same time a farewell to H. S. Austin, president of the Ajax.

Mr. Austin is to leave this month for Irak. Turkish Petroleum Co., composed of the Anglo-Persian Oil Co. and several American companies including the New Jersey company, has "borrowed" Mr. Austin to manage the construction of a pipeline system from the Mosul field in Irak to the Mediterranean Sea. The system will have capacity to run 85,000 barrels daily.

During the absence of Mr. Austin the affairs of the Ajax line will be directed by General Superintendent Doles. E. J. Sadler, vice-president of the Standard Oil Co. of New Jersey, attended the St. Louis dinner.

Pipeline to Mexico City

HOUSTON — Mexican Eagle Oil Co., Ltd., (El Aguila) of the Royal Dutch-Shell group, is progressing rapidly on laying its 220 kilometer (a kilometer is five-eighths of a mile) pipeline from the Palma Sola district of northern Vera Cruz to Mexico City, where an interior refinery is under construction.

Ingenerios y Contratistas Martin, S. A., the contracting firm engaged in building the system, has been averaging the laying of 175 to 250 lengths of pipe daily. The line is welded. Trucks and track-laying type tractors are used.

The new system, estimated to cost $10,000,000, will connect all fields in the Tampico district with Mexico City. "El Auguila" already has 250 kilometers of line between Tampico and the so-called South fields.

Gasoline Well Extends Oklahoma City Pool Farther Into City

TULSA, Nov. 15

OKLAHOMA City, the southern Konawa area and Gray county, Texas Panhandle, divided the honors with the most interesting completions in the Mid-Continent during the past week, Central Kansas contributing a fair completion of local importance.

Another gasoline well was added to the list of Oklahoma City when the test of Jones Drilling Co.-Blackwell Oil & Gas Co. on the southeast edge of town was completed for 187 million cubic feet of gas. The well made 105 barrels of gasoline in 50 minutes, but as the connections above the master gate began to cut out, the well was shut in.

The well, which is located in the NW SE NE NE of 35-12-3W, is the first completion of the Rock Island tracks. It is but a stone's throw south of the fairgrounds. No definite plans have been announced for reopening the well.

Peculiarly enough, the north part of the section, just southeast of the location of the Jones-Blackwell g a s s e r witnessed three comparative failures the week before. It was thought by some that the limits of the field might possibly have been approached on the northeast edge, but the new well may call for a shifting of lines on the structure maps.

Other developments in the Oklahoma City pool were more or less of a routine nature. A couple of good completions were reported along the west edge of the pool, in the town lot area that until recently could be called the northwest corner. Both wells had initials of better than 20,000 barrels daily, based on short time gages.

The chief developments in other parts of the state took place in the area southwest of Konawa, in Twp. 6N-6E. Here the Magnolia Petroleum Co. completed one that made 3174 barrels in 10 hours. The well has been shut in pending the erection of an additional gas trap. Sand was encountered at 2730-40. The well is located in the SE NE SW of 29-6-6, and though by no means a discovery, its size is something new to this territory.

In the 8N-5E area, north of Carr City, little was added to what is already known about the pool. Amerada Petroleum Corp., discoverer of the pool, finished up another in the SW SE NW of Sec. 3. It made 925 barrels in seven hours, the last hour's gage showing a decline from the earlier peak.

Another test well in the same area began to show signs of making a well, when the Empire Oil & Refining Co. No. 2 in the SE NE SE of 3-8-5 picked up 800 feet of oil in the hole while drilling the Simpson from which the production comes at 4080-90.

A few wells, most of which were light enough to be more or less disappointing, were reported in the process of being completed. Of these the best was the Pure Oil Co. test in the SE SE SW of 14-6-3. Picking up the sand at 3621-36, the well started off flowing about 70 barrels an hour. Deepened four feet it increased its production a little making 733 barrels in eight hours.

Texas Panhandle

The best gas dry gas well to be completed in southeastern Gray county, Texas Panhandle was brought in during the week. The well, which was the Magnolia Petroleum Co. No. 2 Cubine, in Sec. 36, Blk. 25, H. & G. N. survey, was completed for 35 million cubic feet of dry gas in the lime pay 2270-2329.

Other Gray county completions were either inside locations, or offset each other. No wells of imposing size were brought in, the average being less than 300 barrels daily per well. For the entire Panhandle, production fell off 9284 barrels to 74,850 barrels daily average from 1926 wells.

Kansas

About the best well of the week in Kansas was the one completed by the Lario-Shell interests in the SE of 1-20S-2W, in Marion county. A chat formation well, it made 475 barrels in 11 hours, cutting 9 per cent. About three or four million cubic feet of gas per day was coming with the oil. The pay was encountered at 2920-72.

In the same area, a few miles northeast of the above well, a dry hole to the chat was reported. Palmer et al, in the SW NW NW of 7-20S-1W, found the chat at 2622 feet, with no showing after drilling a foot of it. Six inch pipe is to be run, and the hole carried on down, it is said.

TULSA, Nov. 15.—Receivers have been appointed for the Monarch Royalty Corp., of Tulsa, by federal courts in Wilmington, Del., and Tulsa. George L. Ransom, Tulsa and E. E. Berl, Wilmington, were named by the Delaware court while the Oklahoma court appointed Mr. Ransom and James A. Harris, Wagoner, Okla.

Complain of Salt Water Pollution

SPRINGFIELD, Ill.—The Illinois State Sanitary Water Board has written a letter to oil producers in the southeastern part of that state complaining about salt water pollution of streams. The board suggests the construction of impounding reservoirs in which the salt water should be kept during low water periods being released only when it will be so diluted by stream waters as to cause no damage.

The Mid-Continent Skyline

By Lawrence E. Smith

WE REALLY must get out our copy of "Why We Behave Like Human Beings" and see if we can find the answer to one that is puzzling us. Harry H. Smith, secretary and counsel of the Mid-Continent Oil & Gas Association, who is otherwise as estimable a man as you would meet in a tour of a miniature golf course, has a long row of hats on top of a bookcase in his office. At last count there were five, including the one on his head. It is an odd custom and one that is not entirely explained by his assertion that they are all old hats, each having given way in its time to a new one that he bought and started wearing. Our own theory is that he is taking detective lessons by mail and that the hats are parts of disguises.

* * *

Ellick Botts, consulting pumper of the Gray Horse district, is out on bond pending appeal of the decision of the corporation commission which found him guilty of producing oil.

* * *

A party of Wichita oil men have gone to Corpus Christi, Tex., for several days of hunting and fishing. Included are Fred Jones, F. E. Lockhart, Ralph Pryor, Art Hershberger, Bill and Dave Ainsworth, Gear Stoddard, Sam Day, H. K. Beardmore and Dee Lauck.

* * *

D. E. Buchanan, of Hanlon-Buchanan, Inc., natural gasoline marketers and producers, has returned from a trip to Europe.

* * *

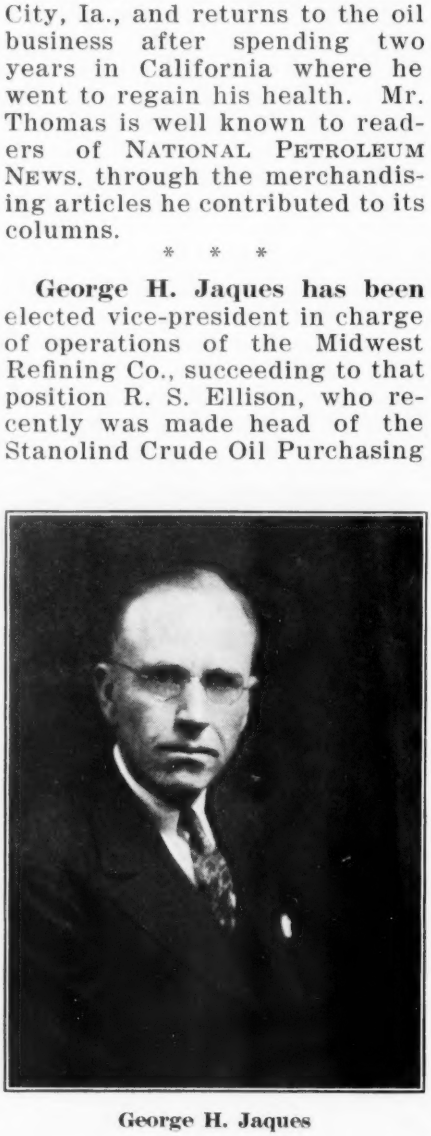
Offices of the Fuhrman Petroleum Corp., in Texas, have been moved from San Angelo to Midland and the Wentz Oil Corp. has transferred its San Antonio headquarters to Midland. Fred Fuhrman has charge of the Texas operations of the first named company, and G. W. Homer manages the division for the Wentz.

* * *

R. H. Thomas has been appointed manager for the new western sales division of the Mid-Continent Petroleum Corp. His headquarters will be in Lincoln, Neb. He was one time division manager for the Standard Oil Co. of Indiana at Mason City, Ia., and returns to the oil business after spending two years in California where he went to regain his health. Mr. Thomas is well known to readers of NATIONAL PETROLEUM NEWS. through the merchandising articles he contributed to its columns.

* * *

George H. Jaques has been elected vice-president in charge of operations of the Midwest Refining Co., succeeding to that position R. S. Ellison, who recently was made head of the Stanolind Crude Oil Purchasing Co. and moved from Casper to Tulsa. Mr. Jaques is a field man of thorough training. He entered the Midwest organization in 1917 as superintendent of the field machine shops. Prior to that year he had been with oil companies in California. He was made superintendent of equipment for the Midwest in 1926 and in 1928 he became general superintendent of production.



George H. Jaques

* * *

Died: In Casper, Wyo., R. J. Mosher, oil producer and drilling contractor. He was active in the Salt Creek field development. Death was due to injuries sustained in an automobile accident.

* * *

R. W. McDowell, vice-president in charge of sales for the Mid-Continent Petroleum Corp., accompanied by Mrs. McDowell has gone to Europe to look over marketing conditions. Jacob France, president of the company, preceded him to London by a week.

* * *

Earl Trager has resigned as chief geologist of the Skelly Oil Co. and will engage in business as a consultant.

* * *

Robert L. Kidd is now with the Cities Service Gas Co.'s geological department. He came to that company by transfer from the Empire Oil & Refining Co.

* * *

Offices of the Independent Petroleum Association of America have been moved from Ardmore, Okla., to Tulsa. National headquarters of this body, whose objective is a tariff on imported oil, will be maintained in the Thompson building. Russell B. Brown, executive manager, and Charles E. Bowles, statistician, have moved to Tulsa.

ADVERTISING PAGES REMOVED

Recent Methods of Utilizing Waste Refinery Fuels

By L. A. Mekler*

Part II

THIS concludes two exclusive articles on this subject to appear in National Petroleum News. The first article appeared Nov. 12, and discussed heavy fuel oil and acid sludge.

PETROLEUM coke is a by-product of petroleum refining which makes an ideal fuel when properly used but which becomes a nuisance if stored at the refinery. Approximately 1,500,000 tons of petroleum coke is produced in the refineries per year at present, of which 750,000 tons is consumed as fuel and as raw material for processing outside of the refineries. Of the remaining quantity, approximately 500,000 tons is consumed as fuel in the refineries themselves so that the refining industry as a whole is accumulating coke piles at the rate of more than 250,000 tons per year.

The growth of the coke piles is best demonstrated by the following figures. In January, 1928, the output of coke by all refineries on record was 103,200 tons. The stocks of coke in coke piles at these refineries at that time was 331,300 tons. In September, 1929, the coke output increased to 161,200 tons or slightly over 50 per cent of the January, 1928 figure. The coke in coke piles in September, 1928, was 648,500 tons, or approximately double the amount for January, 1928. In spite of the increased use of petroleum coke as fuel and raw material by the other industries, the quantity of the petroleum coke stocks at refineries is constantly increasing and in July, 1930, the coke on hand in the refineries of record exceeded 800,000 tons. The above figures do not include the coke accumulation in California where one refinery alone has an estimated coke pile of 500,000 tons.

Some refineries, accumulating coke piles, produce liquid and gaseous by-products by their refining operations in excess of their fuel requirements and consume these by-products in preference to petroleum coke because the coke can be stored much easier than the other by-products. However, a large number of the refineries with mounting coke piles use salable liquid fuel or purchased natural gas, both of which could be easily replaced with petroleum coke.

Petroleum coke is an almost ashless high heat value fuel which, when properly used, gives as good results as liquid fuel or gas. Fuel users begin to realize this and the use of petroleum coke as fuel outside of refineries is constantly increasing. For example, a Mid-Continent public utility company has located one of its plants in the neighborhood of large refineries so that it can use as fuel the petroleum coke produced by these refineries. From the time the power plant was put into operation, it has burned nothing but powdered petroleum coke, and the operating staff, as well as the management, are satisfied with the results obtained.

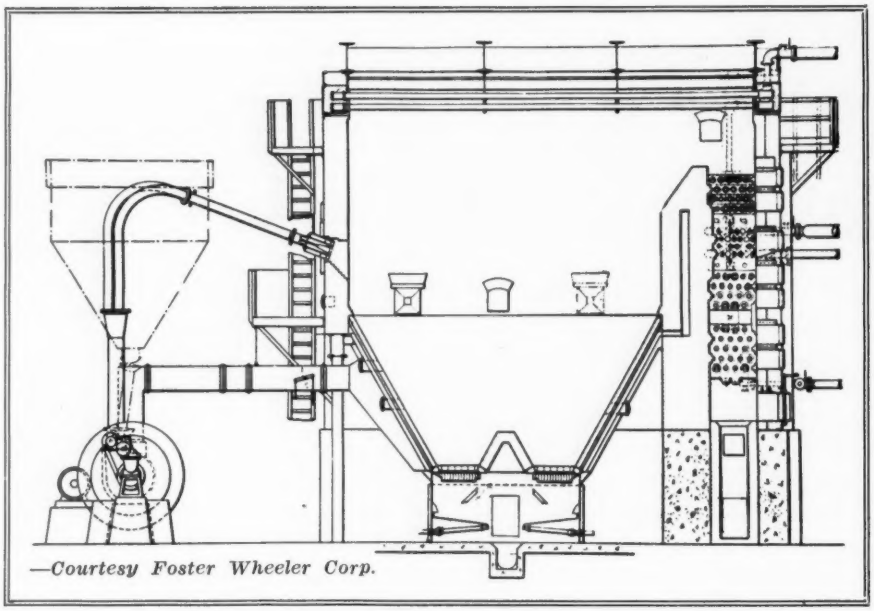
If the refinery producing coke has large fuel-consuming units, such as boilers of high rating or large capacity tubular heaters, petroleum coke can be best burned in powdered form under these units. Unless lime or other alkalies are used for the neutralization of the crude processed, the ash content of petroleum coke is below one per cent. The burning of powdered coke, therefore, presents no difficulties of ash removal, slag formation, accumulation of ash dust on the heat absorbing surfaces, deterioration of refractories in the combustion chamber by the chemical action of the ash minerals or other similar difficulties common to powdered coal firing.

As a general rule, petroleum coke requires less power for pulverization than most of the coals so that in this respect as well petroleum coke is preferable to coal. While some pulverizers have been reported to be subjected to greater wear and tear when pulverizing coke than the average experienced with coal, most pulverizers show no appreciable difference in this respect, particularly if their construction is slightly modified to take care of the pulverizing characteristics of the coke.

Petroleum coke is a by-product of refining, and its properties, particularly the hardness and the volatile content, depend greatly on the method of operation of the unit producing the coke. Coke is obtained from reducing or coking stills and the cracking operation. As a rule coke produced in coking stills is harder and has less volatile material than that from cracking. In some cases soft pitch is produced in cracking as a result of faulty operation. A heavy pitch from cracking, which was solid and brittle at atmospheric temperature has been successfully crushed and pulverized for fuel.

Very pitchy and very hard cokes, however, are exceptions and normal cokes produced from cracking any charging

*Combustion Engineer, Universal Oil Products Co.



—Courtesy Foster Wheeler Corp.

Fig. 6—Elevation of coke-pulverizer installation in tube still

stock by any method of operation do not differ sufficiently to require radical changes in equipment or operation with a change of source of the coke. A few simple precautionary measures in handling and certain provisions in the methods of firing coke, will as a general rule, take care of most of the troubles due to variation of the coke.

A large portion of the petroleum coke produced in the refineries is quenched either before or immediately after its withdrawal from the stills. The water used for quenching adheres mechanically to the surface of the coke. If the coke is stored before using, most of the water will drain off and the moisture of the coke will be not much greater than the moisture of some coals used for pulverizing. Very wet coke has a tendency to pack in a mill and in the conduits between the mill and the burner. Storing of the coke before pulverizing, therefore, will eliminate the greater portion of the troubles with plugged mills, irregular feed, and irregular firing. Experiments carried out by a number of manufacturers of pulverizing equipment indicate that wet coke required 10-25 per cent more power for pulverizing than dry coke and reduced the capacity of the mill proportionally. The storing of the coke is, therefore, desirable from this point of view as well.

Petroleum coke is usually removed from the stills by semi-mechanical means. A considerable portion of the petroleum coke produced in the United States is removed by pulling through the coke, a cable or chain that had been suspended in the chamber before the run was started. Some refineries use the rotary drill method of removing coke. It is, therefore, not uncommon to find in the coke "stray iron"—pieces of wire, small sections of cable or chain and pieces of beater balls. Unless the stray iron is removed before the coke enters the pulverizer, it may either damage the pulverizer or materially increase the wear and tear of the rolls or similar grinding parts.

A set of grizzlies installed between the storage bin and the

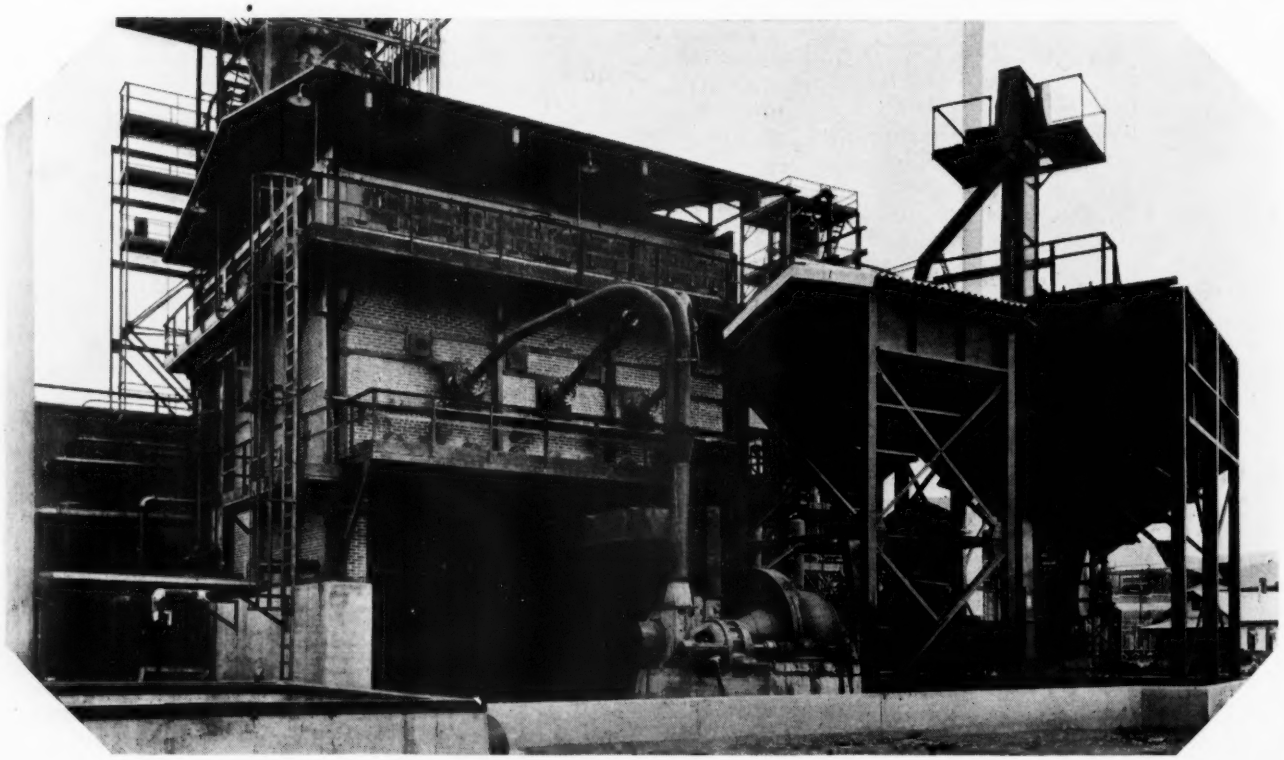


Fig.7—View of pulverizer shown in Fig. 6

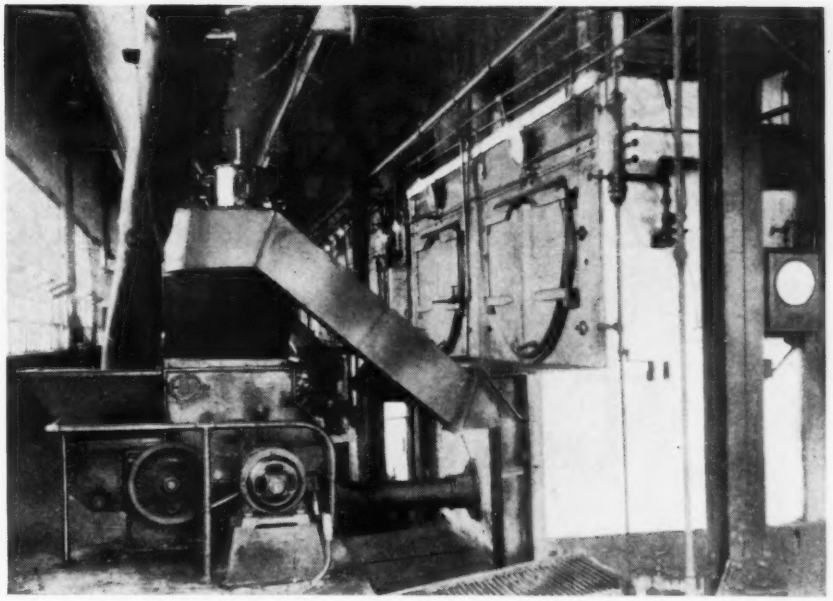
crusher, fine crushing of the coke before it is sent to the pulverizer to expose the iron, and the use of a magnetic separator between the crusher and the pulverizer will remove almost all of the stray iron and eliminate most of the troubles of pulverizing the coke because of the iron. If the coke contains appreciable quantities of lump pitch, an additional set of grizzlies installed between the crusher and the pulverizer will remove most of the pitch, because the pitch is usually not crushed and leaves the crusher in slabs much larger than the coke pieces.

The burning of petroleum coke in powdered form differs very little from burning any other finely divided fuel, provided that the furnace temperatures are sufficiently high to ignite the coke particles and complete the combustion before the furnace gases are cooled by contact with the heat absorbing surfaces. Low volatile petroleum cokes are the hardest to burn particularly in a furnace with large amounts of radiant heat absorbing surfaces. In such furnaces the coke is best burned with preheated air and the burners so located as to be surrounded by incandescent refractories which radiate toward the burners and hasten the combustion reaction.

At one of the large power plants where petroleum coke is used as fuel and where occasionally very low volatile coke is encountered, it was necessary to cover a portion of the water walls of the boiler with refractories to provide a re-radiating surface for the burner.

Table 2 shows typical results obtained with powdered coke on large boilers. These results were obtained when the boilers were operated at over 200 per cent of their rating. The efficiency of the boilers with and without the economizer, was respectively 86.07 and 80.50 per cent, which compares favorably with the results obtained on the same boilers with fuel oil or refinery gas.

Table 3 shows the results obtained with powdered coke when fired under a large tubular still equipped with a Hardinge conical ball mill pulverizer. A cross section and general arrangement of this installation are shown in Figs. 6 and 7 respectively. The results tabulated in table 3 also compare favorably with the results obtained on the same still with fuel oil or gas.



—Courtesy Strong-Scott Co.

Fig. 8—Four 150-horsepower return tubular boilers fired with Powdered Coke

Powdered coke can be used satisfactorily on smaller units as well, to give just as efficient results as those shown in Tables 2 and 3. An eastern refinery is firing four 150-horsepower return tubular boilers without any trouble in spite of the fact that this type of boiler is one of the most difficult to fire with powdered fuel. This installation is shown in Fig. 8.

One of the manufacturers of fuel pulverizing and powdered fuel burning equipment has developed a method of burning as little as one hundred pounds of petroleum coke per burner and of splitting the powdered fuel from a pulverizer among as many as 10 burners. The method is best applicable to a battery of small units such as a battery of shell stills of low capacity where there is not sufficient space for individual pulverizers. If the space is available and the plant conditions are such as to justify the capital investment necessary, unit pulverizers can be used even on the smallest units, as there are

Table II***

Results of Firing a 550 H.P. Edgemoor Boiler with Petroleum Coke

Screen Analysis (*)		**Per cent**
Through 200 mesh		81.9
Through 150 mesh		93.7
Through 100 mesh		92.2
Over 40 mesh		.2
Chemical Analysis of Coke	**As Fired**	**Dry**
Volatile matter	15.40	16.5
Fixed carbon	77.47	83.00
Ash	.47	.50
Moisture (**)	6.56	
Heating value and B.T.U. per lb.	14,712	15,869
Performance		
Actual water evaporated per hour, lbs.		41,070
Equivalent evaporation per hour, lbs.		44,648
Equivalent evaporation per pound of fuel as fired		12.19
Equivalent evaporation per pound dry		13.07
Flue gas temperature, Deg. F.		550
CO_2 in flue gases—per cent		15.03
O_2 in flue gases—per cent		4.68
CO in flue gases—per cent		None
Boiler efficiency without economizer—per cent		80.5
Comparative efficiency including economizer—per cent		86.07
Average K.W.H. to pulverize one ton of coke		21.1

*The coke was powdered much finer than necessary.

**Excessive moisture was due to mechanical admixture of water so as to determine the operation of the pulverizer under extreme moisture conditions.

***L. A. Mekler, "Recent Developments in Heat Generation and Application in Petroleum Refineries", National Petroleum News, Oct. 17, 1928.

Don't guess, don't be afraid— install the Dubbs process

This is no time for refiners to be guessing

It is no time to be afraid, or to doubt or to hesitate It is *the time* to build solidly and safely and profitably for the future

These are lean days The way out is to make better gasoline at lower cost

Lean times are a challenge and a spur to able men *They* can always weather the storm Anybody can get by when the sun of prosperity shines Adversity sharpens wits

In times like these strong men work their wits overtime They survey the situation and study their problems They try to lessen hazards They take no chances This is a time for investment, not gambling, and this applies to refinery equipment and processes

The Dubbs process can make the highest yield of best gasoline at lowest cost from any

charging stock More than 250 Dubbs units are proving that every day in many parts of the world

Every Dubbs plant is built to fit the conditions in its field—raw material supply, transportation and markets The Dubbs process is so flexible that it can be easily changed as conditions change

Universal Oil Products Company guarantees every Dubbs licensee against any possibility of loss arising from patent litigation

With the Dubbs process you don't have to guess and you need not fear

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

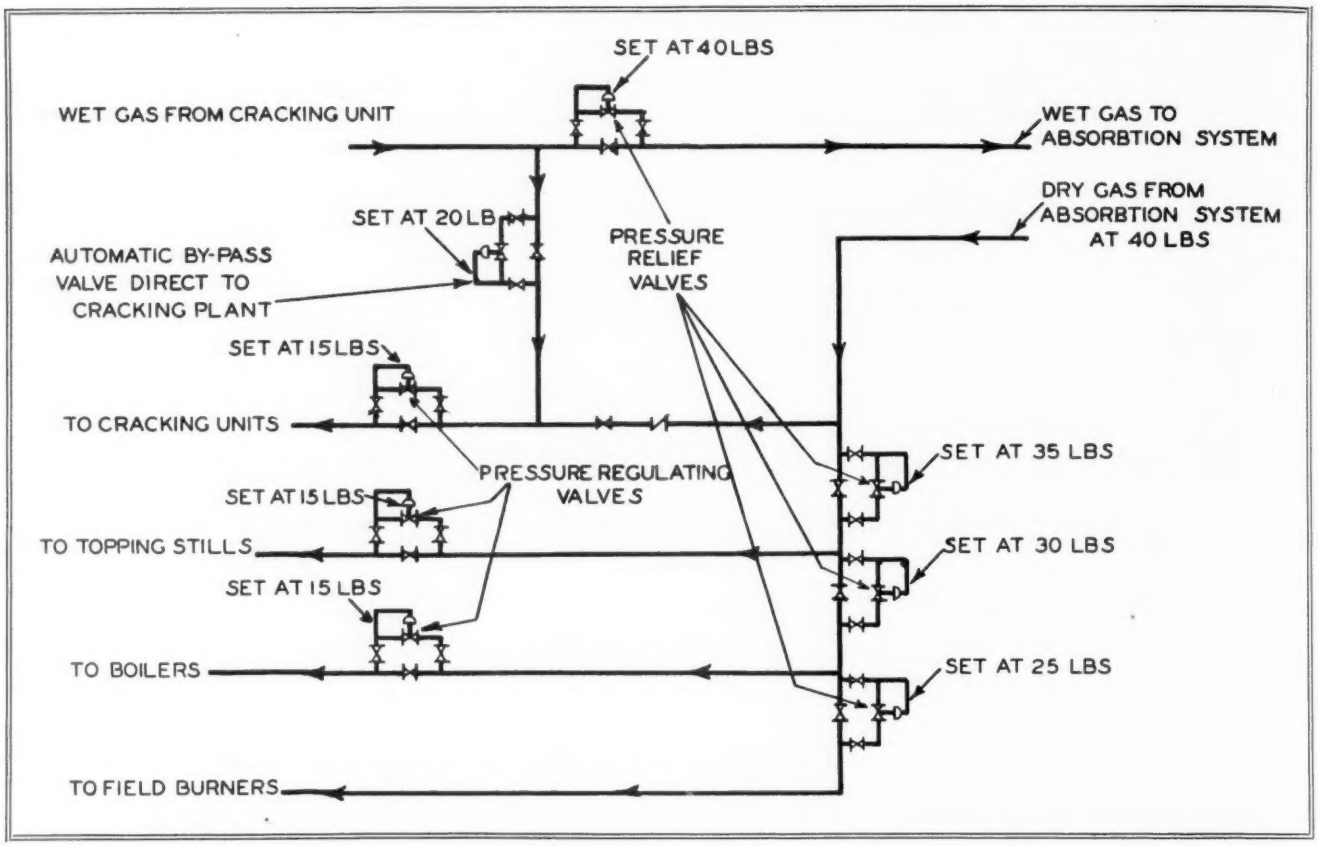

SET AT 40 LBS
WET GAS FROM CRACKING UNIT
WET GAS TO ABSORBTION SYSTEM
DRY GAS FROM ABSORBTION SYSTEM AT 40 LBS
SET AT 20 LB
AUTOMATIC BY-PASS VALVE DIRECT TO CRACKING PLANT
PRESSURE RELIEF VALVES
SET AT 15 LBS
TO CRACKING UNITS
PRESSURE REGULATING VALVES
SET AT 35 LBS
SET AT 15 LBS
TO TOPPING STILLS
SET AT 30 LBS
SET AT 15 LBS
TO BOILERS
SET AT 25 LBS
TO FIELD BURNERS

Fig. 9—Gas distributing system for regulating automatically the proportion of gas fed to various refinery units

at present on the market pulverizing units having a capacity of 200-400 pounds of powdered coke per hour.

Where the settings of the fuel consuming units are too low for powdered coke firing, or where the units are too small or too obsolete to warrant the expenditure for a powdered coke installation, a considerable quantity of petroleum coke can be burned under the units on grates if mixed with coal. Up to 50 per cent of the total fuel can be coke without serious changes of the setting or the grates. In many cases, the mixture of coke with the coal improves the fires if the peculiarities of the coke are taken into consideration when the mixture is burned.

As a general rule petroleum coke requires less primary and more secondary air than most coals and gives a higher fuel bed temperature at the same rates of combustion. Unless the drafts are properly adjusted for the mixture of coke and coal, the fuel bed temperature may become too high and fuse the ash of a coal that, when burned alone, gives an infusible ash. Bad clinkering of the coal ash is one of the main troubles encountered in burning petroleum coke on the grates in admixture with coal, when the total quantity of air used for combustion and the distribution of the air as primary and secondary are not adjusted to give low fuel bed temperatures.

Petroleum coke can be burned on grates without the mixture of coal where a small, steady load is maintained on the fuel consuming unit. Ordinary grates protected by 2 to 3 inches of 1-inch-1¼-inch pieces of firebrick can be used for the purpose. The brickbats covering the grates eventually fuse and have to be replaced every 2 to 3 weeks. A shallow bed of fuel and frequent firing and raking give the best results. The fires so obtained are steady, have a high radiant heat component and give a somewhat greater thermal efficiency than semi-anthracite and bituminous coals. A small refinery in the East that fired the shell stills with petroleum coke alone reported slightly higher throughputs and considerably lower maintenance of still bottoms than those obtained with coal firing.

Table III*

Barrels crude oil per day	7,500**
Inlet oil temperature, °F.	350
Outlet oil temperature, °F.	750
Capacity of coke pulverizer, lbs./hr.	3,500
Per cent through 200 mesh screen	85
Temperature gases above convection tubes, °F.	1,300
Temperature gases leaving still	360
CO_2 in flue gases, %	14.0
Inlet oil temperature, °F.	350
Outlet oil temperature, °F.	750

*Foster Wheeler Corporation.
**Fractionated to overhead products and cylinder stock bottoms in tower having eight side streams.

Refinery Gas

Refinery gas is produced in considerable quantities as a by-product of the topping and the cracking operation of the refinery. In its raw state the gas contains an appreciable amount of liquid hydrocarbons which have a tendency to separate out or condense in the lines particularly in the dead ends of the headers of the fuel consuming units. The condensate has different burning characteristics than the gas itself and by its presence disturbs the regulation of the gas burner. Large quantities of

THE wide awake refiner realizes that he must fortify himself against future market conditions by providing a means for producing only a high antiknock gasoline from crude oil.

This can best be accomplished by the use of the Pratt Process for manufacturing antiknock blending fluid out of crude oil or any liquid fraction therefrom.

Mix this blending fluid with your straight run gasoline in proportion to your refinery production or buy gasoline and blend at a profit.

You can sell straight run gasoline mixed with Pratt's blending fluid when ordinary gasoline is going begging.

The use of Pratt's blending fluid made from natural crude sources in your own refinery under your personal supervision not only enables you to guarantee the purchaser a superior product but you do so at a profit.

THE AUTOMOTIVE DISTILLATE CORPORATION

Licensors of the Pratt Vapor Phase Cracking Process

Continental Life Bldg.

St. Louis, Mo.

condensate passing through a gas burner for any length of time will essentially coke up the burner tips necessitating the removal and cleaning of the gas burned. It is, therefore, necessary to provide means to drain the lines to avoid slugs of condensate entering the gas burners.

With short overhead gas lines the main supply line is usually sloped away from the fuel consuming units so that the condensate drains back into the separator tank or into a trap. To further assure dry gas at the burner, the leads to the burners are taken from the top of the main. With long underground gas lines, more elaborate provisions for draining the condensate may become necessary and automatic traps, mist extractors on the mains, and bleeders at the burners may be required.

Where large quantities of gas are produced absorption or compression systems to recover the condensate are now quite commonly used. These systems not only give dry gas to the burner but recover considerable quantities of light gasoline which, when blended with the other gasolines improves their volatility and anti-knock characteristics.

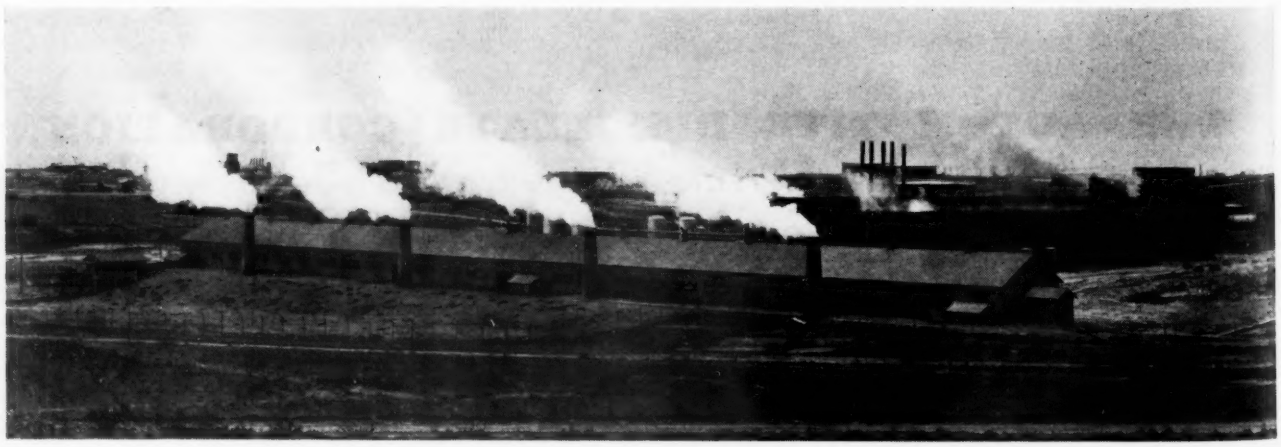
If more than one group of units is fired with refinery gas, the gas-distributing system should be so arranged that the groups that require the closest temperature regulation have first call on the supply when the quantity of gas available falls below the requirements of all the gas fired units. For example, if cracking units, topping and rerun units, and boilers constitute the three gas fired groups, the cracking units should have first call on the gas. The topping and rerun units should only get the surplus of the gas from the cracking units and the boilers the surplus from the topping and rerun units.

Fig. 9 shows a high pressure gas distributing system layout where the above arrangement is obtained automatically by means of pressure control valves. A pressure of 40 pounds per square inch is maintained on the gas separating vessel of the cracking units and the gas from this vessel is sent directly to the absorption system. The dry gas returned from the absorption system is also kept at 40 pounds. An automatic pressure regulating valve, set at 20 pounds, is installed in a by-pass line directly from the separator to the furnaces of the cracking units. If the pressure on the line to the cracking furnaces falls below 20 pounds this valve automatically opens sending wet gas direct to the cracking units. This assures a steady pressure of at least 20 pounds on this line irrespective of the delivery from the absorption system. A pressure relief valve from the takeoff line to the topping stills and the boilers is set at 35 pounds so that the topping stills will not receive any gas until the pressure in the line before the relief valve is built up in excess of 35 pounds by the surplus from the cracking stills. Similarly no gas will flow to the boilers until the surplus from the topping stills builds up a pressure in the line to the boilers in excess of 25 pounds. The field burner takes the surplus gas from all the units.

A low pressure gas system with 10-15 pounds initial pressure from the absorption system can be laid out in a similar manner but more sensitive control valves will have to be used to operate on the smaller pressure differentials available.

When burned alone refinery gas gives the easiest manual control and is best adapted to automatic control either of the furnace temperature or of the temperature of the material leaving the heater. With proper proportions of fuel and air short, practically non-luminous flames can be obtained with small quantities of excess air particularly if the greatest portion of the air is used as primary air. A change of ratio of primary to secondary air will change the luminosity of the flame and with large proportions of secondary air semi-luminous flames, often found desirable to open flame radiant heaters, can be obtained.

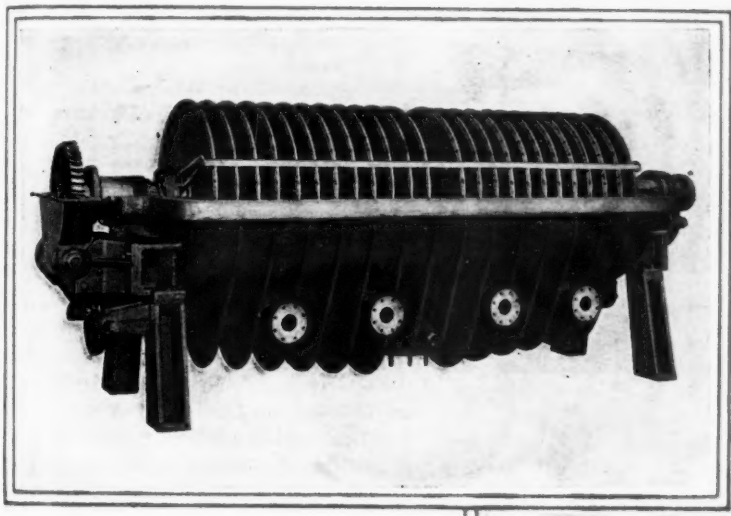
Refinery gas requires different air fuel proportions and gives different flame characteristics than liquid or solid refinery fuels. For example, 10% CO_2 in the products of combustion is an indication of good gas fires; with fuel oil the same proportions of excess air will give 13-14% CO_2 and with powdered coke 15-16%. The flame produced by burning refinery gas is normally shorter and less luminous than the flames from



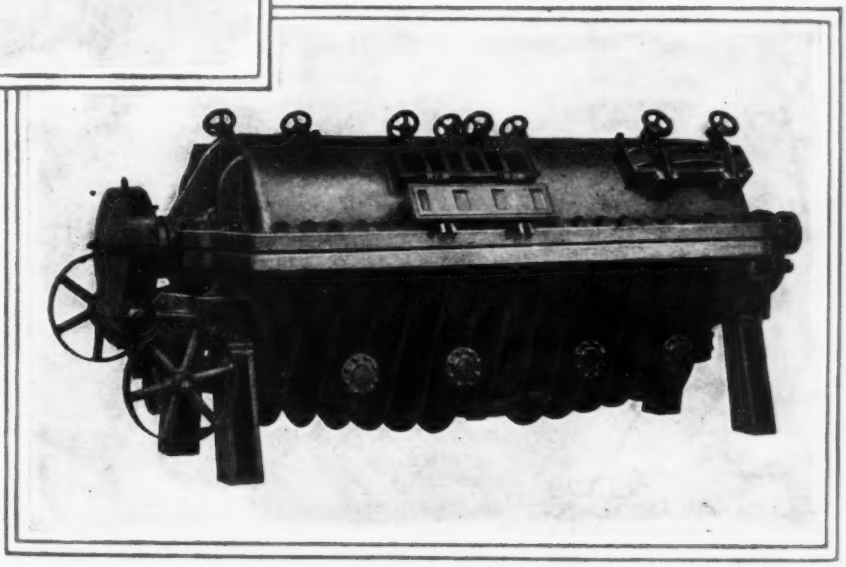
One sign of approaching winter in the Panhandle is the smoke that comes from the exhausts at gasoline plants. In hot weather none is visible. This is a view of the Phillips Petroleum Co.'s large plant at Borger, Texas

Vogt ROTARY FILTERS

The Improved method of dewaxing to produce Sub-Zero pour test Oils!



For solvent recovery systems in the manufacture of lubricating oils, a pressure filter is required for separating the paraffine wax from the oil. The Vogt Rotary Filter with its special features of scraping and conveying the wax has been designed to meet this demand. It is built for higher working pressures than other similar types and has the added advantage of remote control.



To meet the demand for a high quality lubricant for motor and airplane service, modern refineries are constantly seeking adequate equipment for their needs. Special arrangements can be made for a laboratory filter for experimental work if desirable. Write for complete details.

HENRY VOGT MACHINE CO.

INCORPORATED

Louisville, Kentucky

New York **Chicago** **Philadelphia** **Cleveland** **Dallas**

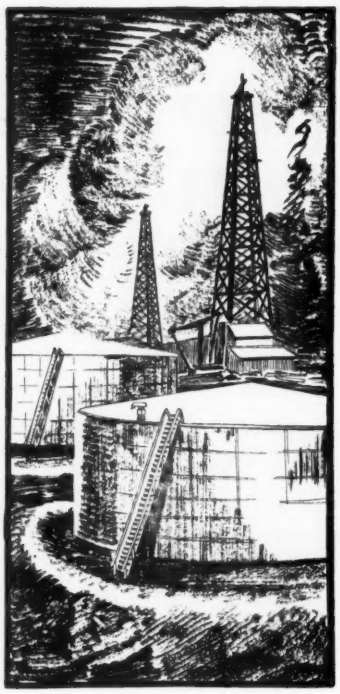
Manufacturers of: OIL REFINERY EQUIPMENT - - - DROP FORGED STEEL VALVES AND FITTINGS
WATER TUBE AND HORIZONTAL RETURN TUBULAR BOILERS - - - ICE MAKING
AND REFRIGERATING MACHINERY - - - HEAT EXCHANGERS

OCECO PROMISES
Always CONSERVATIVE
Are Always EXCEEDED

ON every continent of the globe, OCECO Fittings are making good. Wherever oil is stored, OCECO equipment is doing far more than was claimed for it.

Minimizing fire hazard, reducing evaporation losses, cutting insurance costs — these economies are effected when tanks are Oceco-equipped.

The result is gratifying — within a short time OCECO equipment has saved its cost. And thereafter it pays dividends year after year!



The Oceco Type B Vent Unit consists of double flange vent collar, flame arrestor, conservation vent valve, and flame snuffer.

Oceco Still Safety Valves provide for the relief of both excessive pressure and excessive vacuum within the still.

THE OIL CONSERVATION ENGINEERING COMPANY

877 Addison Road **Cleveland, Ohio**

Engineering and Sales Service:

90 West Street, New York

Box 552, Beaumont, Texas **Tulsa Trust Bldg., Tulsa, Okla.**

OCECO

fuel oil and particularly from powdered coke with the same proportions of excess air.

Unless refinery gas is used for pilot flames only and in substantially constant and relatively small quantities, it is, therefore, best not to burn the gas simultaneously with other fuels in the same units where there is not sufficient refinery gas to fire all the units of a given group. Where flue gas analysis and flame characteristics are used as combustion control indication of an open flame radiant heater, a variation of proportions of the gas and the other fuel in the mixture will affect this control and may change the operation of the unit without affecting the indicated furnace temperatures or flue gas analysis.

The constantly diminishing margin of profit from the majority or refinery operations is slowly but surely forcing refiners to adopt more modern, economical, and efficient methods of operating their plants. A more complete utilization of non-salable refinery by-products as fuel and the consequent release for the market of larger quantities of the salable products used as fuel while by-products are allowed to go to waste, is one of the greatest single steps in increasing the efficiency of a refinery.

Even in localities where standard fuels, such as fuel oil or natural gas, have a low market value, the use of by-products for fuel will at least pay its own way. With normal prices for standard fuels, the savings made by using the non-salable by-products as refinery fuel, usually pays for the investment in equipment within a surprisingly short time.

Pipeline Deliveries Down

TULSA—Reflecting the generally lessened demand for crude oil, Prairie Pipe Line Co.'s deliveries for October fell to below 100,000 barrels daily. The total was 3,015,848.94 barrels, or 97,285.45 barrels per day. In September the company delivered an average of 141,553 barrels daily and in October, 1929, deliveries averaged 207,392 barrels.

New Refining Patents

Fractionating Tower. U. S. P. 1 776 061, Sept. 16, 1930, application filed Nov. 10, 1926; John C. Black.

AN IMPROVED fractionating tower has been designed to give increased efficiency and economy, particularly in the separation of cracked distillates into their components.

One of the major features of the improvement is the arrangement of trays and bubble caps. In the drawing, the vapor passage 17 is formed with 3 studs 41, to which the bubble cap 18 is attached by bolts 42, the bubble cap resting on shoulders formed on the studs. Each vapor passage has a bubble cap thus supported. This provides a very effective and economical method of affixing the caps, which must be firmly held in place against the pressure in any tower operated with a considerable vapor velocity. Each plate has legs 43 to support the upper trays, and is fitted with a central bubble cap and 3 concentric rows of caps; but this number may be varied according to requirements.

This system of support permits the cap to be adjusted to uniform vapor distribution across its whole periphery, and allows for adjustment of all the caps to give uniform distribution of the vapor across the plate. The caps are also adjustable vertically and in the plane of the cap.

By thus sealing the liquid return pipes by forming the seal as part of the bubble caps, a highly effective fractionating arrangement is obtained at a low construction cost. Further improvement is effected by arranging the analyzer with its inlet at the top, so that the vapors pass downward; and by removing the condensate in such a way that the pressure of the vapor aids in removing the condensate from around the cooling tubes.

What Is Claimed

In fractionating apparatus, a conduit leading preheated oil into an evaporator; means for removing unvaporized residuum from the evaporator; distributing trays in the evaporating compartment, and bubble trays above the distributing trays to remove entrained residual oil from the vapor; a fractionator separated from the evaporator by a liquid trap; a distilling compartment below the fractionating compartment; means for controlled vapor passage between compartments; and an analyzer taking vapor from and returning condensate to the fractionating compartment.

* * *

Acid Sludge Disposal. U. S. P. 1 776 070, Sept. 16, 1930, application filed Dec. 3, 1928; Chas. Hinde.

THIS invention overcomes certain difficulties hitherto met with in disposing of the acid sludge from sulfuric acid treatment of oils, in that it provides for conversion of the sulfur into sulfur dioxide, which is discharged into the air, and also provides for thorough consumption of the carbonaceous portion of the sludge. The apparatus for the improved method comprises one or more elongated horizontal furnaces, lined with acid-resisting refractory material and having flues adapted for diluting the sulfur dioxide with air and discharging it into the atmosphere in such a way that it will be harmless to the surroundings.

In its passage through the furnace, the acid sludge is subjected to an intense heat which is controlled within prescribed limits to give thorough consumption of the carbonaceous material and complete conversion of the sulfur to sulfur dioxide. The sludge is sprayed into the furnace by being forced, with steam or compressed air, through a suitably placed atomizer. The flue gases may either be treated for recovery of sulfur dioxide, or discharged into the atmosphere at height sufficient to prevent damage to vegetation.

What Is Claimed

Continuously disposing of sulfuric acid sludge by impelling it along a defined course while excluded from contact with metal, subjecting it to progressively greater heat to expel water and to start the decomposition of the acid, then decomposing the remaining sulfur trioxide to the dioxide and oxygen and consuming the carbonaceous matter, cooling the gases while keeping them in motion, diluting them with air and discharging them into the atmosphere.

* * *

Refining Light Distillates. U. S. P. 1 774 611, Sept. 2, 1930, application filed July 22, 1927; Ernest B. Phillips and James B. Stafford, Assignors to Sinclair Refining Co.

AS AN improvement over the usual doctor treatment for desulfurizing and desulfurizing petroleum distillates, with the particular object of overcoming the difficulties involved in accurate control of the reaction, a new treatment is described. The reagent is a solution of black copper oxide in strong caustic, and is believed to contain sodium cuprate.

The new reagent is effective if applied in the common manner, simply by shaking the oil with the aqueous reagent. The preferred method, however, is to carry out the treatment in conjunction with distillation. In this embodiment of the invention, the oil vapors are driven into a reflux tower, into which is fed the aqueous sodium cuprate solution, emulsified in fresh oil. Thus the vapor to be sweetened is brought into direct contact with the reagent.

This treatment greatly facilitates production of finished gasoline from naphtha fractions or from crude or cracked oils or other mixtures or distillates. It is also applicable to the sweetening of crudes before separation of the light from the heavy fractions.

What Is Claimed

Subjecting the vapors of oil undergoing distillation to a refluxing operation in direct contact with an alkaline aqueous solution of sodium hydroxide and copper oxide free from undissolved copper oxide.

TIRE PROFITS are Yours for the Taking

OIL Companies large and small have proven that tires can be merchandised through service stations at a profit.

But—they must be merchandised. Must be sold by modern, efficient methods—must be displayed properly—handled right all the way from factory to consumer. Just buying a stock of tires and placing them on the racks will not make money for you.

The Cooper Corp. can show you how to sell Cooper Tires at a profit through your stations.

Our long experience in merchandising tires through our own one-stop service stations—our knowledge of the fine points of the business can help you to escape the pitfalls which undoubtedly exist.

Cooper Tires are first quality—the kind you can sell to your good customers and know that they will be satisfied and come back to buy from you again.

The line is complete—comprising Passenger Car, Truck and Bus Balloons.

Prices are right. You can meet any competition and still make a profit. You deal with the factory direct, which reduces sales costs. You have exclusive territory.

Remember—now is the time for oil companies to get in the tire business. The first company to handle tires in any community will have a distinct advantage over those who enter into it later.

If you operate service stations—if you want more profit per station—write or wire for full details about Cooper Tires and the Cooper selling plan.

THE
COOPER
CORPORATION
FINDLAY, OHIO

TIRES

Facts the Oil Marketer Should Know Before He Takes On This New Line

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND

THE oil marketer who decides to meet the new competition of tire sales at gasoline and oil stations by a group of major companies has three lines of action open to him.

1. He may carry a nationally advertised brand of tires, called a standard brand in the tire industry.

2. He may carry a manufacturer's brand that is not nationally advertised but for which he may have exclusive sales rights in his territory and escape the competition that is common with standard brands.

3. If he has a market for a sufficiently large volume of tires, he may have his own brand manufactured, using either the brand names of his gasoline and oils or a new name.

In any of the cases he must see that he is handling only first line tires unless he elects to gamble with the goodwill and reputation of his petroleum products. This warning is handed down by tire manufacturers.

In the first method cited the oil marketer has the advantage of the manufacturers national advertising, national acceptance, and manufacturer's warehousing at important distributing centers. But he faces the competition in his territory, under present conditions at least, of large and small tire dealers who also handle the standard brands, and possibly the competition of a store or service station in which the tire manufacturer is financially interested. He may also be unable to meet the competition of chain store and mail order house price for price for first line tires.

In the second and third classifications the oil marketer will do his own advertising in his territory, will use his own goodwill and acceptance of his petroleum products for acceptance of the tire he chooses to merchandise, and will do his own warehousing at his bulk plant.

In these classifications he can meet the chain store and mail order house competition and still sell first line tires at an average of about 30 per cent under the list prices of standard brands. In underselling the standard brand that much, the oil marketer, at present prices, will still have a gross margin of 30 to 40 per cent above cost of the tires to him.

These percentages are taken from actual cost and selling price figures of one oil company which this year began to sell a tire manufacturer's brand of tire that is not nationally advertised.

Just how long those percentages will hold forth, no one can tell; everything depends on the rubber market and efforts of tire manufacturers to put their business on a more profitable basis than it has been this year. But it may be expected that the ratio of costs to selling prices will not vary so widely in the next year or so.

THE oil marketer will encounter two general systems of purchasing. One is the delivery of the tires to him by the manufacturer at list prices less discounts. This is the customary plan under classification No. 1. Under classification Nos. 2 and 3 he may buy f.o.b. the tire factory and pay his own freight which is said not to exceed 25 cents per casing on long hauls, and much less on short hauls. This assumes the shipments are to be carloads of approximately 1500 casings each.

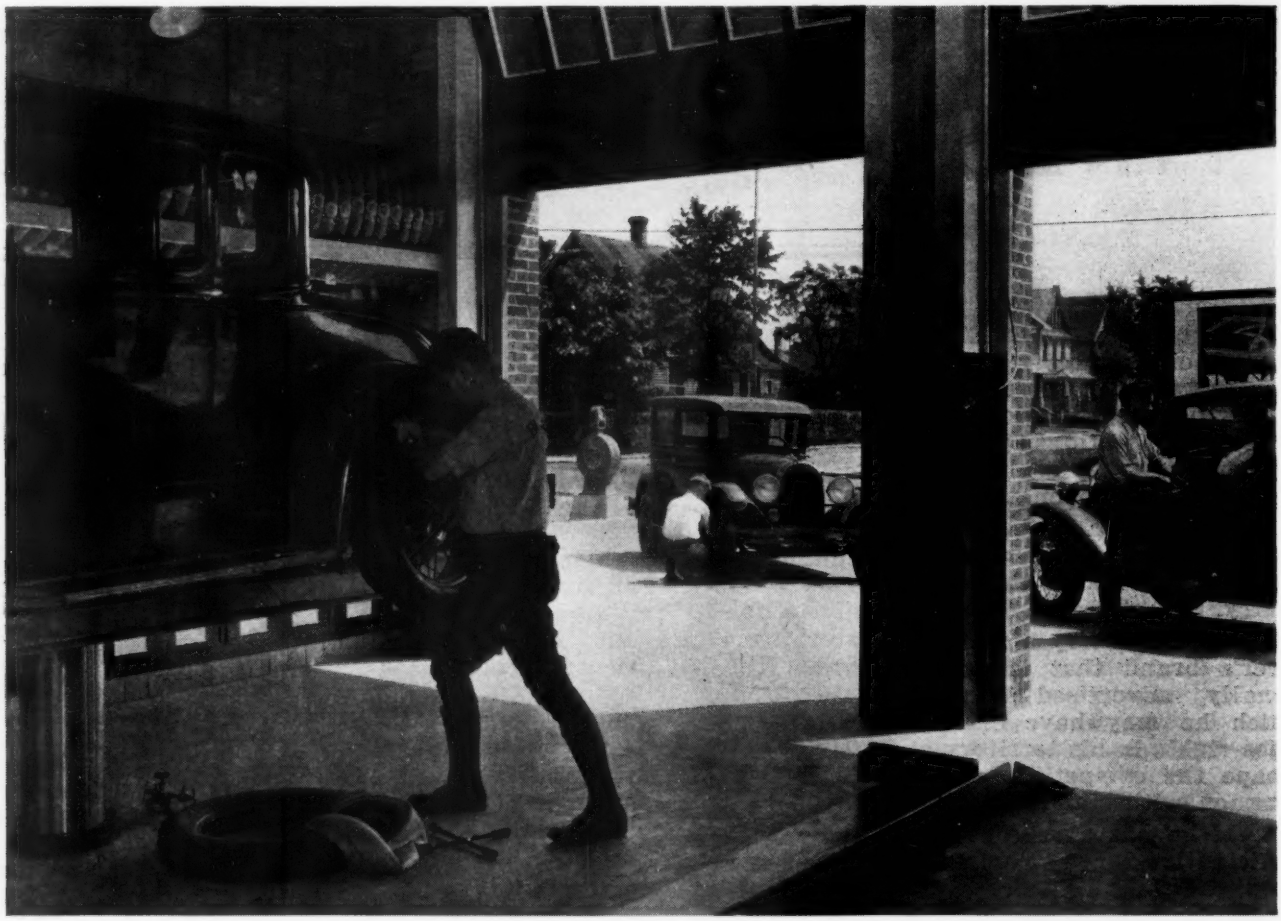
Some oil companies when they have considered having their own brands made up, have been told that the investment in tire molds would be $50,000 to $75,000. One manufacturer of special brands has told NATIONAL PETROLEUM NEWS that this figure is far too high except where a very great volume of sales must be cared for. This manufacturer said the tire sizes of most of the cars on the road today can be covered by an outlay of $3500 to $5000 for molds, which cost approximately $225 apiece.

THE output of casings per mold runs 18 to 20 per 24-hour day, the manufacturer said. This means that with $5,000 of molds about 800 casings could be made each 24-hour day, a quantity that few oil companies could sell except the majors that operate over a wide territory.

A carload of casings represents an investment at present low prices of approximately $10,000. There are sufficient tires in one carload, one manufacturer said, to stock 50 service stations with 30 casings each. But it is not necessary to carry that number at service stations if the oil company's distributing set-up is such that tires can be delivered quickly from storage at bulk plants.

It is unnecessary to stock more than $250 of tires and tubes at a service station in the opinion of one tire manufacturer who has studied the oil company service station field as an outlet for his products. However, a sufficient stock at bulk plants to serve a large part of the tire market is necessary, this man said.

The bulk plant stock should not be so large that rate of turnover is slackened. One tire manufacturer said the rate of tire inventory turnover might be held as low as five days in cases of a large number of outlets in a concentrated market. But it would be necessary to have additional stock rolling



Key tire station of Pocahontas Oil Corp., Cleveland. This key station was built for a lubritorium. Tires were added with little extra expense. One free-wheel lift is used for tire service. Note the station's reserve stock of casings is stored overhead out of the way. Tire business is sent to this station by 14 feeder stations which are neighborhood oil and gasoline stations of this company

from the tire factory. How the oil company should govern its rate of buying only experience can tell, he said.

Oil companies will be approached, it is said by some tire manufacturers and oil companies that have undertaken tire and tube selling, with propositions that they carry a second line tire to compete with the tires of mail order houses and the better known chain stores. Selling second line tires cannot be considered, said a manufacturer, without risking the reputations of the oil companies' petroleum products.

The second line tire, it was explained, contains lighter gauge cord. Reclaimed rubber is also compounded with new rubber in building the carcass and tread.

The first line tire is like the tire the car has when it is equipped by the automobile manufacturer at the factory. Heavier gauge cord and all new rubber is used in its manufacture.

"How can we tell that we are getting a real first line tire that will stand up in road service?" is a question that is asked by some oil marketers who are contemplating adding tires to their merchandise. Send it to a reputable tire laboratory, is the advice of tire manufacturers. Such a laboratory is Akron University, Akron, O. The charge for testing averages around $100 a tire.

The difference in price of first and second line tires at the factory varies with the differentials between the cost of raw and reclaimed rubber, manufacturers say. At present the difference between the two is only a few cents a pound.

In connecting with a source of supply the oil marketer, it is pointed out, should look into the stability of the source, and its ability to supply a first line of merchandise quickly. In other words its manufacturing set-up should be ample to supply required sizes of first quantity goods when they are needed by the marketer. If his source of supply could not supply him with his required sizes quickly he would have to get the sizes when he could get delivery and tie up his working capital in reserve stocks. Such a situation precludes quick turnover and quick profits.

In addition to the manufacturers who advertise their products nationally, and maintain their own warehouses and often retail outlets, there are certain manufacturers whose set-up is strictly a manufacturing proposition. These manufacturers have brand names of their own and, like their larger competitors, they make tires under customers' brand names.

This latter group of manufacturers sell their products to tire distributors. This class claims that it has been able to eliminate a great deal of the expense that is incurred when there is a duplication of sales effort by the manufacturer and the distributor, because, under their selling method, the distributor or his retail outlet does the advertising or sales promo-

DON'T BE THE LAST TO ORDER

THE DISTINCTIVE SUB-ZERO OIL

BURNHAM *Tested* PALES

GRADE 200 FLOWS AT 40° BELOW ZERO

The last jobbers to order BURNHAM "Tested" PALES will be the last to realize the profits from selling Winter oil guaranteed to *flow* and *lubricate* at 40 degrees below zero. They will be the last to offer the Winter oil that has shattered every cold test record... that lubricates quickly and thoroughly ... that has body enough to stand up under summer driving.

Don't be the last to offer your customers BURNHAM "Tested" PALES, the golden oil of profit and satisfaction.

These cold test oils, super-refined from a special crude by modern methods protected by patent, are "uncracked" and contain only 3/1000 part free carbon and no tar, ashpalt or other non-lubricating particles.

"Tested" in our Refinery laboratories for five years previous to perfection and marketing; "tested" by countless distributing jobbers on the road in extremes of sub-zero temperatures, in hottest summer months and under the most adverse conditions ... *and never found lacking.*

DON'T BE THE LAST

Be in the front ranks of satisfied BURNHAM "Tested" PALES dealers. Send in the coupon today. It brings you specifications, prices and a sample bottle of BURNHAM "Tested" PALES 200, the 40 degree below zero oil.

PIN TO YOUR LETTERHEAD

CALUMET REFINING CO., 4329 So. Western Blvd., Chicago, Ill.

Please send me specifications, prices, and a sample bottle of BURNHAM "Tested" PALES, the 40 degree below zero oil.

RIP OFF HERE

Name .....

Street .....

City ..... *State* .....

CALUMET REFINING CO.

4329 SO. WESTERN BLVD., CHICAGO, ILL.

BRANCH - GUARANTEE TITLE BLDG., CLEVELAND, OHIO

REFINERY - BURNHAM, ILL.

tion work directed at the ultimate buyer.

Most of these manufacturers are members of the Rubber Association and use the association's guarantee against defective material and workmanship for the life of the tire.

Casings come to the oil marketer or other distributor double wrapped with papers. This wrapping prevents any deterioration of the tires even if stored a year or so. The tire unwrapped must not be exposed too long to the light. However, the chemical effect of light rays can be impeded by coating with black tire paint any tire used for display. It is unnecessary to store tires in cellars or dark rooms, manufacturers say, although this has been the practice for years.

At the service station the tires are displayed usually in racks with the casings set upright. This is the method of the Colonial Beacon Oil Co. with its Atlas tires; the White Star Refining Co., Detroit, with its Staroline tires, and the Pocahontas Oil Corp., Cleveland, with its Pharis tires.

The Pocahontas corporation does not stock tires at all its service stations. It has a key station for each 14 neighborhood stations at present. It carries a complete line of tires at the key stations but only one sample tire at the 14 feeder stations.

Station salesmen at the feeder stations have all been coached in selling tires. They are paid a commission. The feeder station salesmen may sell tires and send the customer to the key station. He may take the customer's rims or wheels and send them to the stations, or if the customer will do his own mounting, the salesman may send to the key station for the tires and deliver them to the customer.

Besides the sample casing, each Pocahontas feeder station has a supply of literature describing the tires. The station salesmen may suggest tires to their gasoline, oil and lubrication customers and pass out circulars telling the merits of the tires the station is selling.

The Pocahontas introduced its tire line by mailing an illustrated colorful circular 15 x 16½ inches, to every name on its lubrication service records and also to other motorists in its territory. It tied up the tire to its own Blue Flash trade mark although it sells the tires under the name of the manufacturer. It featured the saving but said it was not cutting prices in these words:

"Offering special inducements, premiums, or cut rates has never been permitted by the Blue Flash code, nor is the present saving on Pharis tires of this sort.

"The Pocahontas Oil Corp. sells you these tires at their regular prices. That the prices of Pharis tires are, grade for grade, lower by an average of 30 per cent than those of other standard makes is not the result of price competition. But it does arise from an effort to keep price low when quality and service have first been assured.

"Unlike ordinary tire shops, Blue Flash stations need not depend on tires alone to make a profit. All Blue Flash stations have always made their profit from the sale of gasolines, oils and lubrication service. So—with no increase in overhead, these stations can include tires at prices that represent an average saving of 30 per cent to you."

Telling about the company's tire service, Pocahontas continued in the circular:

"Besides selling tires where it is most convenient for you to buy them—at 75 Pocahontas service stations — Pocahontas service on Pharis tires includes installation, tire changing, vulcanizing . . . everything to valve stem replacements. Most important of all, your Pharis tires will be inspected for proper inflation as often as you drive into your Pocahontas station . . . and a Certified Tire-Life Recording will be made of every incident in your tire's history."

Dozen Tire Sizes Cover Cream of the Market

ONE dozen sizes of casings and tubes will cover more than 90 per cent of the tire replacement market for passenger cars sold in 1929 and 1930. A few more sizes will cover the requirements of new passenger cars sold the last few years.

The sizes that represent the cream of the tire replacement market have been picked by NATIONAL PETROLEUM NEWS from the cars which have had the greatest sale the last two years. They will be published in an early issue.

This article also will contain a list of tire sizes for all standard American cars made in 1929 and 1930. These cars represent the best market for tire sales in the immediate future.

Oil Companies Bear Gas Tax Collection Cost

KANSAS CITY—Statements showing the low costs of gasoline tax collection are false since the oil industry collects the tax without cost to the state, H. H. Ragle, president of the Michigan Oil Men's Association, told the National Tax Association Conference here last month.

Improved scientific methods of producing and refining crude oil have enabled the oil industry to keep down its retail other commodities, and enabled the gasoline tax to mount, he said. If the industry had not made these improvements in manufacturing, which resulted in lower retail prices, the state could not have put such a heavy tax burden on gasoline, Mr. Ragle said.

The speaker listed increases in gasoline taxes, local gasoline taxes, diversion of funds, and refunds.

Buys Kansas Loading Rack

TULSA—Sinclair Oil & Gas Co. has purchased the 15-car loading rack at Elyria, Kans., from the Skelly Oil Co. and has put it into service. Oil from the Voshell pool nearby is being shipped to the Kansas City refinery of the Sinclair interests. The Skelly company discontinued use of the rack some months ago when it completed its trunk pipeline to the field, giving connection direct to its El Dorado refinery.

OIL COMPANIES

become *real factors in tire sales*

by NOT

having this kind of competition

THAT FIGURE on the right is not a design for a Chinese rug. It's real.

It's crawling around every day. Now, oil companies can let it go where the flies go in the winter time.

One head represents the tire manufacturer who, through his own retail stations, competes with oil companies handling his tires.

The next is competition with the same make of tire sold under numerous brand names by controlled dealers.

The third head represents ordinary, respected competition—competition with other brands of tires that sell everywhere.

THE PHARIS TIRE & RUBBER CO.
Newark, O., U. S. A.

Prices that out-compete competition of any kind are yours with the PHARIS set-up. A definite guarantee, an open-minded adjustment policy, and fair treatment to all, are PHARIS traditions.

Oil Companies are real tire-factors with the PHARIS line.

PHARIS 1st LINE TIRES

Automotive Route Studies Cut Oil Delivery Costs

By Eugene Power*

(Presented before American Petroleum Institute, Chicago, Nov. 11-13)

FOR some reason the marketing division of the petroleum industry is called upon to render super-service to its customers—particularly in its delivery of commodities by truck. The buying public has been educated to expect prompt delivery of orders, irrespective of size or distance from point of supply or of the available of equipment. This situation naturally forces a condition on a sales organization which compels careful arranging and supervising of delivery routes and of the types of motor equipment adapted thereto.

When considering the delivery angle, the old idea of giving service to customers regardless of cost, without considering unnecessary rush or direct delivery, back hauls, criss-crossing, excessive mileage, or waste of man-power, must be discarded if business is to be handled on a profitable basis.

Consideration must be given, furthermore, to the types of equipment supplied for a given territory. Tank capacity, number and size of compartments in tanks, advisability of equipping with meters, size and type of tires, single or dual rear, gear ratios, and weight distribution are some of the questions involved. Other important items are the selection of drivers or tank truck salesmen and careful supervision of their activities.

When considering the driver, it is necessary to differentiate between a delivery man, such as a driver operating a truck in a large city—whose deliveries are predetermined for him—and the driver who operates his equipment in a country district outside of a congested area and who is expected to solicit business—known as a tank truck salesman. Formerly, the latter had a truck assigned to him, and was permitted to determine how and where he should use it. Thus, in many instances two or more trucks would operate in the same area; one per-

*Union Oil Co. of California, Los Angeles, Calif.

Garage 1	Service Station 2	Motor Trans. 3	Commercials 4	Growers & Hdwe. 5	Farmers 6	Lumber Slag'l. Mfg. 7	Marine 8	Jobbers 9	Miscel. 10	Railroad or Pub. Serv. 11	Govt. State City County 12	J F M A M J J A S O N D — SIGNAL MONTH (PROPER COLOR) IN WHICH CONTRACT EXPIRES

OFFICE STAMP MONTH REPORT RECEIVED
CHECK BUSINESS CLASSIFICATION X
QUADRUPLICATE
FORM 042 6-30 2M BOOKS

UNION OIL COMPANY OF CALIFORNIA

SALESMAN'S INITIAL REPORT

25 BBLS. LUB. OR OVER ☐
UNDER 3 BBLS. LUB. ☐
UNDER 12,000 GAL. REFINED PER YEAR ☐
REVISED REPORT ☐
NEW REPORT ☐

FIELD NO. SALESMAN DATE

DISTRICT OFFICE TRAVELING FROM REPORT NO.

FIRM NAME BUSINESS

ADDRESS BUYER'S NAME TEL. NO.

FROM WHOM BUYING REFINED	FROM WHOM BUYING LUBRICATING	CONTRACT OR LEASE REFINED COMPANY	CONTRACT OR LEASE REFINED EXP.	CONTRACT OR LEASE LUBRICATING COMPANY	CONTRACT OR LEASE LUBRICATING EXP.	BRANDS USED	DIVISION OF BUSINESS	REQUIREMENTS	YEARLY
								AUTO OILS (BBLS.)	
								CYL. OILS (BBLS.)	
								BLACK OILS (BBLS.)	
								ENGINE OILS (BBLS.)	
EQUIPMENT								MISC. OILS (BBLS.)	
								TOTAL LUBR. (BBLS.)	
								GREASE (LBS.)	
								ETHYL (GALS.)	
								GASOLINE (GALS.)	
								DISTILLATE (GALS.)	
								KEROSENE (GALS.)	
								STOVE OIL (GALS.)	
								SOLVENT-SPIRITS (GALS.)	
GENERAL REMARKS:								MISC. (GALS.)	

U. O. CO. - RED | S. O. CO. - GREEN | SHELL - YELLOW | ASSOC. - PINK | GEN. PET. - BROWN | RICHFIELD - BLUE | TEXAS - ORANGE | | OTHERS - PURPLE

Fig. 1

haps handling one type of customer and another certain types of commodities. Many times a general utility truck would operate in the same area. This system, naturally, was found to be expensive. In addition, truck mileage was increased. There were too many men in the same field trying to do work that could have been done by a smaller staff.

Two Classes of Automotive Route Study

Generally speaking, automotive route study can be classed under two headings:

A. Delivery within city limits or a congested area.

B. Deliveries to be handled in country area or small towns.

In the former case the area to be covered is much more complicated than the latter, for obvious reasons. In either case, the initial step is the same; viz., a careful analysis must be made of the territory to be served, together with the number of deliveries. The terri-

FORM 418 6-30 10M
PRINTED IN U.S.A.

UNION OIL COMPANY

SALESMAN'S FIELD GALLONAGE REPORT—QUARTERLY

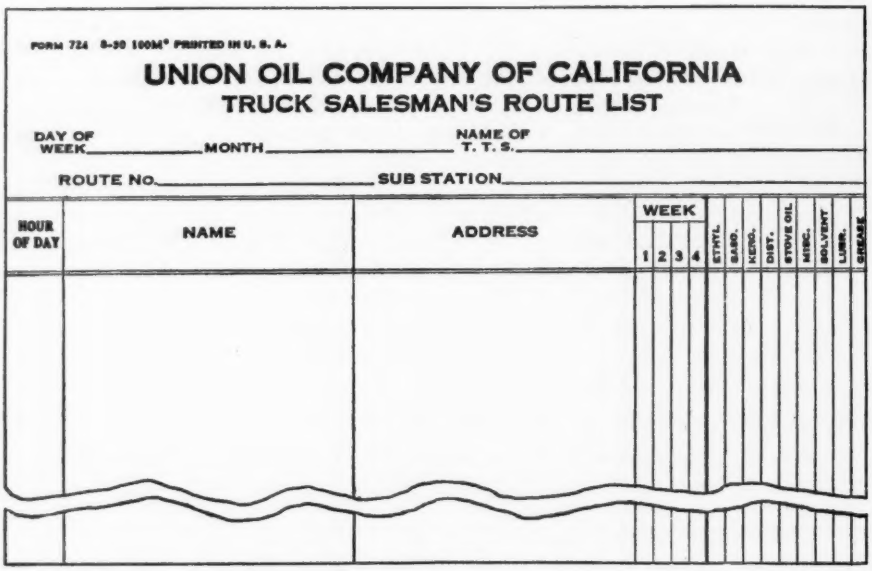
	POTENTIAL GALLONAGE (EST.) YEARLY					U. O. DIRECT GALLONAGE (EST.) YEARLY						FIELD GALLONAGE	
	RES.	COM.	FAR.	OTHERS	TOTAL	RES.	COM.	FAR.	OTHERS	TOTAL	PER CENT	QUARTERLY	YEAR TO DATE
AUTO											%		
CYL.											%		
BLK.											%		
ENG.											%		
MISC.											%		
TOTAL LUB.											%		
U. O. PER CENT OF LUB. POTENTIAL BY CLASSIFICATION						%	%	%	%	%		(PERSONAL SALES)	
GR.													
U. O. PER CENT OF GREASE POTENTIAL BY CLASSIFICATION						%	%	%	%	%		(PERSONAL SALES)	
ETHYL GAS											%		
WHITE GAS											%		
DIST.											%		
KERO.											%		
STOVE											%		
SOL-VENT											%		
MISC.											%		
TOTAL REF.											%		
U. O. PER CENT OF REF. POTENTIAL BY CLASSIFICATION						%	%	%	%	%		(PERSONAL SALES)	

CLASS	SALES	PROSPECTS	CUSTOMERS	TOTAL ACC'TS	LUBRICATING			REFINED			QUARTERLY RESULTS	1ST 2ND 3RD 4TH	GAINED	YEAR TO DATE
					IN FIELD	U. O. CUST'S	PER CENT	IN FIELD	U. O. CUST'S	PER CENT				
											No. Coupon Book Customers			
RES.											" 923 "			
											" 786 "			
COM.											" Refined "			
											" Lub. Oil "			
FAR.											" Grease "			
OTHERS											TOTAL			
TOTAL SMALL													QUARTER	YEAR TO DATE
TOTAL LARGE											Value Coupon Books Sold			
TOTAL														

STATION_____ FIELD NO._____ SALESMAN_____

QUARTER_____ No. Concerns Not Called On: 1st Mo._____ 2nd Mo._____ 3rd Mo._____

Fig. 2



FORM 724 8-30 100M° PRINTED IN U. S. A.

UNION OIL COMPANY OF CALIFORNIA

TRUCK SALESMAN'S ROUTE LIST

DAY OF WEEK_____ MONTH_____ NAME OF T. T. S._____

ROUTE NO._____ SUB STATION_____

HOUR OF DAY	NAME	ADDRESS	WEEK 1	2	3	4	ETHYL	S.R.D.	KERO.	DIST.	STOVE OIL	MISC.	SOLVENT	LUB.	GREASE

Fig. 3

tory then must be mapped out in a manner which will permit economical routing of the truck making deliveries.

In the case of city deliveries, consideration has to be given to traffic regulations; allowable speeds in certain areas, restricted areas, traffic laws, intersections where no U-turns are permitted, intersections where no left turns are permitted, no parking areas, specified hours for delivery of goods, etc.

All of these restrictions have to be carefully analyzed and studied in order first to determine the type of equipment to be used, the size depending, of course, on the volume of delivery. It may be found, for instance, that a truck having a tank of approximately 1,000 gallon capacity—with can racks on the side—would, owing to its speed and maneuverability, best be suited to a certain area.

On the other hand, larger units having tank capacities of 1500 and 2000 gallons would perhaps better be suited to a congested area because of their ability to carry volume enough to supply many customers without return for reloading. These units are found to be particularly adaptable in areas where speed is not a factor, and where congestion is a problem. They are also particularly adapted to service-station service where large deliveries can be made, thus minimizing the number of trips necessary to keep the station tanks filled.

In addition to the tank truck unit, there is the flat type, or stake truck unit. Routing this type is not so easy, inasmuch as the deliveries it makes are more or less irregular, and border on the nature of emergency, except, of course, in the case of lubricating oil deliveries, or deliveries to freight terminals.

Arranging truck routes in the country or less congested areas calls for more detailed analysis. The first consideration is the field to be covered—i. e., the kind of roads—whether mountainous or level; the mileage to be covered; the type of accounts in the territory, large or small, taking into consideration the total gallonage being delivered and the size of each delivery.

It is necessary to consider each field carefully in order to select the most useful type and size of truck to cover it, so as to serve all types or deliveries, bulk, package, or both. For instance, it may be found that owing to the ability to serve a route by continuous driving, the truck making a loop may find it advantageous to have a large unit, perhaps with a trailer, thus enabling the driver to take out sufficient commodities with him to take care of all customers without having to return or re-fill.

On the other hand, it may be more advantageous to supply a combination unit. On this unit there are three tanks which can be taken off if necessary. In addition space is provided at the rear for barrel goods. This unit permits taking a bulk commodity in the tank, and at the same time two or three barrels of lubricating or refined oil, thus taking care of two types of deliveries and obviating the use of the flat-bed or stake truck, which would cover virtually the same ground as the tank truck.

In some cases, particularly where load restrictions are in force, or where, owing to climatic conditions, larger units are not practical, a unit which may be termed "convertible," could be used to good advantage. This unit consists of a chassis with a tank of approximately 300 gallon capacity, and a stake or flat-bed capable of carrying 5 barrels, either unit being placed on the chassis to accommodate the particular delivery. The tank, or bed, is held in place by four hold-down clips and dowels which are easy to manipulate.

The transfer from one mounting to the other is easily made through the medium of a lifting block and chain supported in pre-arranged positions in the wagon shed.

Assuming the type and size of equipment to be used in a given area has been decided upon, the next and most important step is the routing of this equipment, and the proper supervision to assure continued economical and profitable use of it. These ends can be achieved in the following manner:

Operation No. 1

The territory under consideration should be mapped out to show location of sales depots or plants, and the areas to be served by each. For example, the City of Los Angeles and its environs, comprising a territory of about 150 square miles, may be divided conveniently into some 20 odd districts, each of which may have an area of from 3 to 12 square miles.

Each district represents the area which is to be served from a sales depot or plant, and the district boundaries are established after making a survey of all operating conditions. In making this survey, consideration has to be given to topography, highways, and any other physical conditions which would have a bearing on mil-

Coming Soon!

A NEW DIAMOND "SEVEN-SIXTY" A 100% paraffin base oil that flows freely in zero weather!

A modern lubricant that gives the widest temperature range protection . . . retains the 760-degree heat resistance and flows freely in zero weather! Again the Mid-Continent Petroleum Corporation is "ahead of the parade". The new Diamond "Seven-Sixty" offers you unusual profit opportunities . . . write, wire, or phone for details.

NEW DIAMOND 760 MOTOR OIL

MID-CONTINENT PETROLEUM CORPORATION

General Offices: TULSA, OKLAHOMA

CHICAGO LINCOLN ST. LOUIS WATERLOO

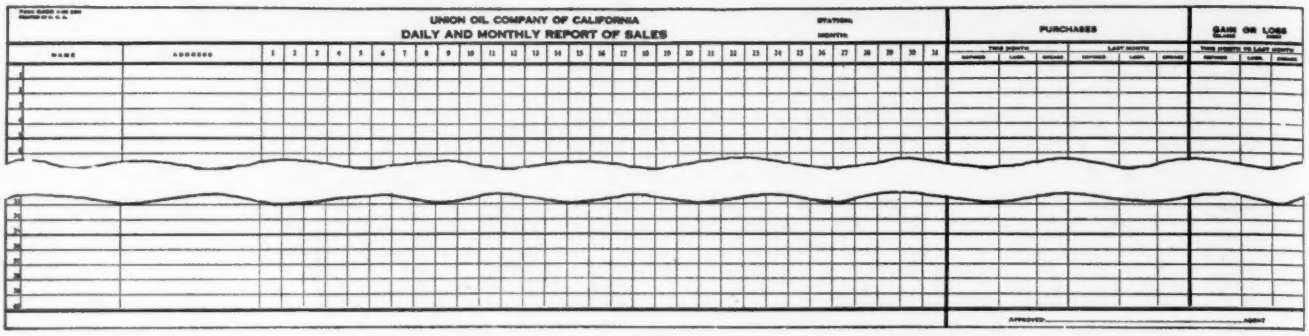


Fig. 4

eage. This to avoid any unnecessary long hauls or back hauls, and unproductive mileage.

Operation No. 2

A detailed analysis of deliveries made by each truck in the area served from each depot or plant should be made, covering a period at least of six months. This study should embrace the daily average sales of each truck; the average unit delivered per truck, per day; the mileage per day, and the percentage of back hauls.

Operation No. 3

A competent man should be detailed to ride with the driver on each truck for a period long enough to cover all the territory served by each truck. This may occupy a week or ten days. This man should carry a map of the area, and mark on same as he goes along the route followed each day, the stops made, and size of deliveries made at each stop. This procedure will produce actual information as to how deliveries are being handled and the time occupied in making said deliveries; and in the case of the driver who can be classed as a "tank truck salesman," information as to his handling of customers can be gathered at first hand.

In addition, this survey will bring out clearly any overlapping of routes or unnecessary long trips for small deliveries. Furthermore, it will indicate if the truck or the type of mounting is suitable for the trade served.

By riding on each unit until the area served by it has been covered, this man accumulates information indicating whether each unit is being worked to capacity, properly routed, and properly loaded. He will also develop information by means of which, probably, customers can be educated to install larger storage capacity.

This enables them to take larger deliveries, reduces mileage in making deliveries, and also assists superintendents in determining whether a truck fully loaded should make initial delivery at the end of its run, and work back to the point, or begin deliveries at the plant end.

After this study has been made, information is available for properly routing each unit. The area served from a depot or plant again is sub-divided into zones, each representing the field to be covered by a particular truck.

By co-ordinating information obtained from Operation No. 2 with that derived from study in Operation No. 3, the route superintendent intelligently can map out the daily route for each truck. In addition to the foregoing, all information derived from salesmen's reports, or analysis of their customers' requirements, should be used to obtain a true understanding of the business in each zone.

Examples of the forms used in accumulating this information are shown in Figs. 1 and 2, the former being "salesman's initial report," which is self-explanatory, and the latter a quarterly accumulation of all information derived from the former. The quarterly report is valuable as a guide to gains or losses in volume of business, and hence has a direct bearing on any decision affecting truck equipment, either as to increasing sizes and number of units, or reducing them.

The foregoing outlines the steps necessary intelligently to arrange truck routes and to determine types and sizes of units.

The next important item is to supervise these routes and take care of the fluctuations caused by seasonal or competitive conditions. To do this, it is advisable to have a daily check on each driver and the volume of deliveries made by him.

Fig. 3 shows a truck salesman's route list, which is made up each day by each driver entering the customer's name and address in order of call. It is divided into four equal periods. All reports made during the first week of the month are checked in column 1 under caption "week." Those in the second week are checked under column 2, etc. If the driver makes a delivery, he checks it in the column indicating the commodity delivered. If he calls on a new customer, he so indicates after the customer's name.

Each day the information on the tank truck salesman's report is transferred to a sheet showing daily and monthly report of sales. This is illustrated in Fig. 4. This sheet shows at a glance the number of days in any one month deliveries have been made to any one customer, information that affords opportunity to contact customers to whom several small deliveries are made, with a view to arranging larger deliveries at stated periods or the grouping of certain customers on any route so as to take a full capacity load, thus saving time and mileage permitting better loading of trucks.

The truck salesman's route forms a guide to the daily activities of each driver. It places in the hands of the plant superintendent a ready guide to be used by a new or relief driver, thereby insuring regular and uninterrupted delivery service when the regular man is off duty through illness or vacation, an important feature in these days of service.

The foregoing may be termed

(*Continued on Page* 75)

ADVERTISING PAGES REMOVED

Crude Production by Fields

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A. P. I.

PRODUCTION SUMMARY

	Nov. 15	Nov. 8
Production east of California	1,702,750	1,700,350
Increase		2,400
Total production in U. S.	2,304,550	2,297,250
Increase		7,300
Crude oil imports	94,000	199,145
Decrease		105,145
Total new crude supply	2,398,550	2,496,395
Decrease		97,845

OKLAHOMA

	Nov. 15	Nov. 8
Allen Dome	13,800	14,100
Asher	1,050	1,000
Asher, West	9,900	10,500
Blackwell	2,350	2,900
Bowlegs	14,450	13,400
Braman	2,050	2,900
Bristow-Slick	12,350	13,500
Burbank	14,150	14,800
Carr City	13,200	9,300
Cromwell	6,300	6,550
Cushing	12,250	12,750
Davenport	900	1,000
Duncan Dist.	7,800	8,250
Earlsboro	20,950	14,950
Earlsboro, East	19,250	14,500
Earlsboro, So.	11,550	8,650
Fox	800	1,150
Garber	4,400	4,400
Graham	2,850	3,050
Healdton	10,400	11,450
Hewitt	5,600	6,650
Hubbard	1,100	1,200
Konawa	16,650	16,500
Little River	24,900	22,750
Little River, East	11,650	12,100
Logan Co.	3,150	4,650
Maud	3,150	3,050
Mission	8,150	5,450
Oklahoma City	85,000	66,750
Okmulgee, North	9,500	9,900
Okmulgee, South	6,250	6,600
Osage (Outside Burbank)	24,550	24,400
Papoose	2,300	2,400
Pearson	500	650
Sasakwa	4,550	4,900
St. Louis	22,900	22,200
Scholem-Alechem	9,450	13,450
Searight	6,850	6,850
Seminole	14,350	13,400
Seminole, East	2,250	2,100
Thomas	400	650
Tonkawa	5,000	5,800
Wewoka	4,600	5,000
Yale-Jennings	5,750	6,650
Others	47,050	56,500
Total, Okla.	506,350	489,650
Increase		16,700

KANSAS

Augusta - Fox Bush	2,700	2,850
Churchill	3,450	3,500
El Dorado-Towanda	13,800	13,900
Florence-Covert	700	800
Greenwood Co.	17,150	19,000
Oxford	2,450	2,450
Peabody-Elbing	2,300	2,350
Rainbow Bend	1,000	1,050
Russell	3,050	3,050
Sedgwick Co.	27,050	28,600
Voshell	6,550	6,000
Others	31,500	34,000
Total, Kans.	111,700	117,550
Decrease		5,850

NORTH LOUISIANA

Caddo, light	8,200	8,400
Caddo, heavy	2,750	2,700
Cotton Valley	1,850	1,850
De Soto and Red River	2,900	2,900
Haynesville	5,250	5,250
Holly	1,100	1,200
Homer	3,350	3,350
Sarepta Carterville	2,350	2,500
Urania	5,300	5,350
Zwolle	9,300	8,700
Others	1,700	1,700
Total, N. La.	44,050	43,900
Increase		150

ARKANSAS

Champagnolle	3,500	3,450
El Dorado	3,900	3,900
Lisbon	900	900
Nevada	1,000	1,000
Smackover, light	4,850	4,850
Smackover, heavy	35,700	35,800
Stephens	900	900
Others	1,200	1,1250
Total, Ark.	51,950	52,050
Decrease		100

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,050	2,050
Elk Basin	800	800
Grass Creek	2,150	2,150
Labarge	1,650	1,800
Lance Creek	250	250
Lost Soldier	3,050	3,150
Oregon Basin	2,500	2,550
Rock River	2,100	2,100
Salt Creek	28,100	28,900
Others	4,250	4,100
Total, Wyo.	46,900	47,850
Decrease		950

Montana

Cat Creek	1,150	1,100
Pondera	1,200	1,650
Sunburst	2,550	2,550
Others	50	50
Total, Mont.	4,950	5,350
Decrease		400

Colorado

Florence	450	400
Fort Collins	1,150	1,100
Moffat (Craig)	1,150	1,300
Others	1,450	1,500
Total, Colo.	4,200	4,300
Decrease		100

New Mexico

Artesia	550	550
Bal. Eddy Co.	100	100
Hobbs High	36,100	34,200
Bal. Lea Co.	6,600	7,400
Hogback	450	450
Rattlesnake	1,150	1,150
Table Mesa	100	100
Total, N. M.	45,050	43,950
Increase		1,100
Total, Rocky Mountain	101,100	101,450
Decrease		350

TEXAS

(OUTSIDE GULF COAST)

Panhandle District

	Nov. 15	Nov. 8
Carson Co.	6,350	6,900
Gray Co.	52,500	57,100
Hutchinson Co.	15,150	18,000
Wheeler Co.	600	800
Others	250	1,350
Total, Panhandle Tex.	74,850	84,150
Decrease		9,300

North Texas

Archer Co.	13,500	13,300
Burkburnett	7,600	7,800
Electra	10,100	10,350
Iowa Park and K. M. A.	4,450	4,550
Montague-Cooke	9,300	9,300
Wilbarger	17,000	15,500
Others	1,800	1,800
Total, N. Tex.	63,750	62,600
Increase		1,150

West Central Texas

Brown Co.	5,100	5,200
Callahan Co.	3,100	3,100
Coleman Co.	2,400	2,450
Eastland-Desdemona	4,900	4,950
Jack Co.	2,000	2,200
Palo Pinto Co.	450	450
Shackleford Co.	5,200	5,200
Stephens Co.	5,400	5,400
Throckmorton Co.	750	650
Young Co.	11,000	14,500
Others	2,000	2,000
Total, West Cent. Tex.	42,300	46,100
Decrease		3,800

West Texas

Crane and Upton Co.'s	35,200	35,900
Crockett Co.	2,050	2,100
Ector Co.	4,850	5,250
Howard Co.	28,000	29,400
Jones Co.	1,400	1,400
Mitchell and Scurry Co's.	2,200	2,200
Reagan Co.	26,250	26,150
Winkler Co.	57,150	58,100
Yates	99,700	102,600
Bal. Pecos Co.	2,800	3,050
Others	6,500	6,550
Total, West Texas	266,100	272,700
Decrease		6,600

East Central Texas

Boggy Creek	2,400	2,600
Corsicana-Powell	5,200	5,400
Currie	300	300
Mexia	3,900	4,100
Nigger Creek	150	200
Richland	150	200
Van Zandt	27,800	27,550
Wortham	600	700
Others	200	.....
Total, East Cent. Tex.	40,700	41,050
Decrease		350

Southwest Texas

Chapmann Abbott	7,000	8,300
Dale	300	300
Darst Creek	43,250	30,500
Laredo Dist.	14,600	13,550
Luling	9,750	9,850
Lytton Springs	800	800
Salt Flat	16,000	15,600
Somerset	1,300	1,500
Others	650	550
Total, S. W. Texas	93,650	80,950
Increase		12,700
Total, Texas (Outside Gulf Coast)	581,350	587,550
Decrease		6,200

GULF COAST

Coastal Texas

Barbers Hill	21,150	19,400
Batson	1,100	1,150
Big Creek	3,400	3,400
Blue Ridge	1,600	1,650
Boling	950	950
Damon Mound	700	700
Esperson	2,750	3,000
Fannett	650	650
Goose Creek	4,350	4,250
Hankamar	2,100	2,200
Hull	8,100	7,800
Humble	13,300	13,900
North Dayton	1,150	1,700
Orchard	2,100	2,300
Orange Co.	2,050	2,100
Pettus	8,800	8,300
Pierce Junct.	10,100	11,150
Port Neches	1,600	1,500
Raccoon Bend	8,850	8,350
Refugio Co.	27,200	26,500
Saratoga	1,200	1,200
Somerville	1,100	1,100
Sour Lake	2,100	2,200
So. Liberty	3,000	3,100
Spindletop	14,350	14,500
Sugarland	11,950	12,000
West Columbia	4,300	4,150
Others	2,400	2,450
Total, Coastal Texas	162,400	161,650
Increase		750

Coastal Louisiana

Edgerly	400	400
Evangeline	2,000	2,000
Hackberry, East	1,900	2,050
Hackberry, Old	900	800
Lake Barre	2,300	2,400
Lockport	4,500	3,900
Port Barre	2,500	2,550
Sulphur Dome	2,700	2,600
Vinton	4,850	5,500
White Castle	1,050	1,050
Others	3,450	4,000
Total, Coastal La.	26,550	27,250
Decrease		700
Total, Gulf Coast	188,950	188,900
Increase		50

CALIFORNIA

Dominguez	10,000	10,000
Elwood-Goleta	33,200	33,000
Huntington Beach	28,000	28,000
Inglewood	15,300	15,300
Kettleman Hills	25,700	25,500
Long Beach	100,200	98,600
Midway-Sunset	59,500	59,000
Playa del Rey	38,000	35,000
Santa Fe Spgs.	95,400	96,300
Seal Beach	18,000	18,400
Ventura Ave.	46,500	46,300
Others	132,000	131,500
Total, Calif.	601,800	596,900
Increase		4,900

EASTERN

(Not including Michigan)	110,000	112,000
Decrease		2,000

MICHIGAN

Mt. Pleasant	4,800	4,800
Muskegon	2,300	2,300
Saginaw	200	200
Total, Mich.	7,300	7,300

Compilation Of Mid-Continent Refinery Operations

All Rights Reserved to the National Petroleum Publishing Co.

Mid-Continent Refinery Operations, Week Ended Nov. 14 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Nov. 14
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	94,000	161,700	106,100	82,000	77,000	521,300
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	56,262 + 6.4	104,694 + 9.5	64,715 + 5.4	38,822 + 7.8	40,443 + 46.9	304,936 + 11.5
Da. Av. Other Oils	7,086 — 38.2	3,247 + 51.2	3,861 + 97.7	5,319 + 6.3	12,256 — 25.9	31,769 — 17.9
GASOLINE—Gallons						
Stocks, Nov. 7	14,175,000	35,311,000	27,819,000	10,666,000	8,450,000	96,421,000
Prod. 11-7 to 11-14	11,144,000 + 12.0	18,109,000 + 17.1	9,610,000 + 6.4	4,095,000 — 3.5	5,072,000 + 4.4	48,030,000 + 10.3
Ship. 11-7 to 11-14	11,183,000 + 5.7	17,837,000 + 9.3	10,143,000 + 16.3	3,156,000 — 39.6	5,287,000 + 1.4	47,606,000 + 3.4
Stocks, Nov. 14	14,136,000 — 0.3	35,583,000 + 0.8	27,286,000 — 1.9	11,605,000 + 8.8	8,235,000 — 2.5	96,845,000 + 0.4
Ratio Sales to Prod.	100.3%	98.5%	105.5%	77.1%	104.2%	99.1%
KEROSINE—Gallons						
Stocks, Nov. 7	8,794,000	12,315,000	2,441,000	23,000	205,000	23,779,000
Prod. 11-7 to 11-14	1,839,000 — 17.5	2,359,000 + 20.2	1,260,000 — 8.3	11,000 — 31.2	683,000 +984.1	6,152,000 + 9.0
Ship. 11-7 to 11-14	1,674,000 — 27.1	1,791,000 — 20.8	1,304,000 — 16.0	24,000 + 60.0	519,000 +155.7	5,312,000 — 16.0
Stocks, Nov. 14	8,959,000 + 1.9	12,883,000 + 4.6	2,397,000 — 1.8	10,000 — 56.5	370,000 + 79.6	24,619,000 + 3.5
Ratio Sales to Prod.	91.0%	75.9%	103.5%	218.2%	76.0%	86.3%
STOVE DISTILLATE—Gallons						
Stocks, Nov. 7	4,496,000	4,926,000	718,000	104,000	714,000	10,958,000
Prod. 11-7 to 11-14	368,000 +103.3	909,000 + 47.6	213,000 + 26.8	13,000 — 87.0	16,000 — 33.3	1,519,000 + 39.5
Ship. 11-7 to 11-14	475,000 — 62.2	170,000 + 25.0	368,000 +257.3	59,000 — 26.2	16,000 — 33.3	1,088,000 — 32.0
Stocks, Nov. 14	4,389,000 — 2.4	5,665,000 + 15.0	563,000 — 21.6	58,000 — 44.2	714,000	11,389,000 + 3.9
Ratio Sales to Prod.	129.1%	18.7%	172.8%	453.8%	100.0%	71.6%
GAS OIL—Gallons						
Stocks, Nov. 7	3,534,000	39,955,000	2,420,000	5,417,000	6,604,000	57,930,000
Prod. 11-7 to 11-14	896,000 — 40.5	1,802,000 + 43.0	820,000 — 13.5	570,000 — 4.0	2,029,000 — 12.7	6,117,000 — 7.8
Ship. 11-7 to 11-14	843,000 — 45.0	3,008,000 + 50.2	631,000 — 51.0	491,000 — 23.2	1,851,000 — 32.4	6,824,000 — 16.8
Stocks, Nov. 14	3,587,000 + 1.5	38,749,000 — 3.0	2,609,000 + 7.8	5,496,000 + 1.5	6,782,000 + 2.7	57,223,000 — 1.2
Ratio Sales to Prod.	94.1%	166.9%	77.0%	86.1%	91.2%	111.6%
FUEL OIL—Gallons						
Stocks, Nov. 7	27,806,000	52,957,000	69,988,000	19,341,000	16,742,000	186,834,000
Prod. 11-7 to 11-14	4,438,000 + 8.4	6,140,000 + 12.8	7,279,000 + 11.9	6,072,000 + 20.5	4,120,000 + 4.4	28,049,000 +12.1
Ship. 11-7 to 11-14	4,291,000 — 10.7	9,412,000 +281.5	6,876,000 + 3.3	5,128,000 — 15.2	4,119,000 — 16.2	29,826,000 +19.8
Stocks, Nov. 14	27,953,000 + 0.5	49,685,000 — 6.2	70,391,000 + 0.6	20,285,000 + 4.9	16,743,000 + 0.01	185,057,000 — 1.0
Ratio Sales to Prod.	96.7%	153.3%	94.5%	84.5%	99.9%	106.3%

Gasoline Produced by Various Methods, Week Ended November 14

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,184,000	55.5	11,384,000	62.9	6,381,000	66.4	3,171,000	77.4	1,338,000	26.4	28,458,000	59.3
Cracked	3,872,000	34.7	5,201,000	28.7	2,174,000	22.6	704,000	17.2	2,857,000	56.3	14,808,000	30.8
Natural	1,088,000	9.8	1,524,000	8.4	1,055,000	11.0	220,000	5.4	877,000	17.3	4,764,000	9.9
Total	11,144,000		18,109,000		9,610,000		4,095,000		5,072,000		48,030,000	

+ or — columns are % changed over previous week.

Mid-Continent Refinery Operations Speeded Up

Staff Special—By Telegraph
TULSA, Nov. 18

MID-CONTINENT refiners increased crude oil runs 31,400 barrels daily average in the week ended Nov. 14. Gasoline output consequently rose 4,500,000 gallons over production the preceding week. Every district increased crude runs with the Louisiana-Arkansas district leading with a boost of 46.9 per cent.

West Texas was the only district that produced less gasoline than the week before. Its decrease in output was 3.5 per cent but its increase in crude oil runs was 7.8 per cent.

Gasoline shipments were larger in all districts but West Texas. For the whole field the increase was 15,000,000 gallons. Stocks increased only 424,000 gallons. Kansas, North Texas and Louisiana-Arkansas districts lowered stocks.

Kerosine production increased

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Nov. 14. Change in stocks figures from Oct. 17.

GASOLINE

	Gallons
Production	189,101,000
Shipments	183,704,000
Net change in stocks	+5,397,000
Ratio sales to production	97.1%

KEROSINE

	Gallons
Production	23,565,000
Shipments	23,460,000
Net change in stocks	+105,000
Ratio sales to production	99.6%

STOVE DISTILLATE

	Gallons
Production	5,503,000
Shipments	4,695,000
Net change in stocks	+808,000
Ratio sales to production	85.3%

GAS OIL

	Gallons
Production	24,328,000
Shipments	28,422,000
Net change in stocks	—4,094,000
Ratio sales to production	116.8%

FUEL OIL

	Gallons
Production	107,302,000
Shipments	112,498,000
Net change in stocks	—5,196,000
Ratio sales to production	104.8%

500,000 gallons. Shipments were 1,000,000 gallons less. Stocks increased 900,000 gallons.

Distillate stocks increased 400,000 gallons when output was stepped up 39.5 per cent, and shipments fell 32 per cent.

Gas oil stocks were cut 500,000 gallons. Fuel stocks fell 1,700,000 gallons.

Automotive Route Studies

(*Continued from Page* 72)

the "paper" method of truck routing and route supervision. In addition, there is a method which has for its *modus operandi* mechanical devices indicating on charts the activities of a truck during any period of operation.

These charts indicate the mileage travelled, the number and duration of stops, and the number of hours the unit was in service. They make a useful check on the activities of the driver, but they fail in that they do not give the detailed information necessary properly to analyze routes from a sales standpoint.

However, once routes have been established along the lines indicated herein, the use of these devices as a medium of check-up cannot be underestimated. They afford a ready method of checking the units without the necessity of a personal inspection by a route man, for by referring to the driver's daily report sheet, the day's work of any particular unit accurately can be determined.

The plan as outlined has worked out satisfactorily, and has proven that when delivery routes are laid out as described, it becomes a relatively easy matter to check them and to adjust equipment to suit volume of output.

Virginia Companies Merge

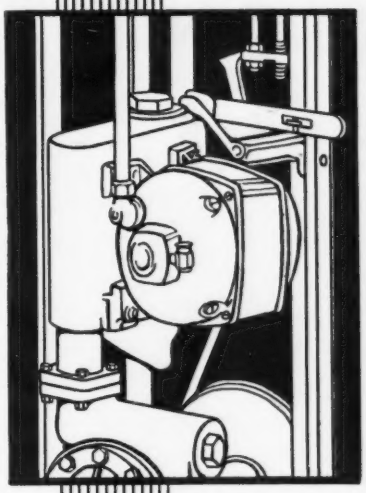
RICHMOND, VA.—Merger of the South Atlantic Oil Co. and the Colonial Oil Corp., has been announced by W. H. Ray, Norfolk, who will head the consolidation. The name of the merged company will be the Colonial Oil Co. with headquarters at Norfolk. Assets, according to reports, exceed $700,000.

The company will operate the many service stations of both companies, and will sell to Independent retailers. Pure Oil Co. products will be handled.

Correction

Prices of Grade C. bunker oil, for ships' bunkers in the Gulf Coast Bulk Market, complete seaboard table, page 90 of this issue, as of Nov. 17 should be 90 cents flat, instead of $0.90 to $1.00 as published. Price will be corrected in next week's issue.

SAFE!



Another reason why Lelands predominate

When a stray spark is liable to ignite combustible vapors, every detail in the construction of a vapor resisting motor must point toward one factor—*safety*.

Because Leland totally enclosed motors combine to the highest degree the element of safety and the characteristic of absolute dependability, they have become the almost universal choice for this particular application.

Full information on Vapor Resisting motors will be supplied upon request.

A. C. Single Phase
D. C. Compound
A. C. Polyphase
Interchangeable Frames

The Leland Electric Co.
Dayton · Ohio · U·S·A

Leland
fractional horsepower
Motors

MELLOWED A HUNDRED MILLION YEARS

At last . . . a pure PENNSYLVANIA grade motor oil for easy starting . . . AND EASY SALES . . . in winter!

Motorists by the thousands saw this startling, striking picture of a prehistoric monster . . . in magazines, newspapers and rotogravures from coast to coast. Then that line *"Mobiline is guaranteed to flow at zero"* caught their eyes. And now they ask for Sinclair Mobiline!

No longer need your Pennsylvania oil customers change to another motor oil for winter driving. The wax that thickens and hardens Pennsylvania oils on cold, wintry days is virtually stripped from Mobiline at as low as 60° F. below zero. This dewaxing process, requiring new oil separators whirling at 15,000 revolutions a minute, takes place in the Sinclair refinery at Wellsville, N. Y. . . . the newest and largest single refinery using Pennsylvania grade crude exclusively.

Here Sinclair Mobiline is refined 100% from Bradford-Allegany crude . . . formed in the Devonian Age, a hundred million years ago . . . the costliest of all Pennsylvania crudes! Here this famous crude is triple-filtered to remove all carbon-forming compounds . . . Mobiline retains its clear greenish color long after other oils have turned black in the crankcase.

Just think it over . . . this striking sales story behind Sinclair Mobiline! You can't beat it! With Sinclair Mobiline this winter you get away from cold weather complaints . . . and get more satisfied, steady customers. Stock up now—winter's here!

Sinclair Refining Company (Inc.), New York, Atlanta, Chicago, Fort Worth, Houston, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR MOBILINE

Reg. U. S. Pat. Off. 1905. Renewed 1925

Pennsylvania MOTOR OIL

Made in the newest, largest single refinery using PENNSYLVANIA grade crude exclusively.

Guaranteed by SINCLAIR REFINING CO. INC. to be 100% pure PENNSYLVANIA GRADE OIL

35¢ *per quart*

©1930, S. R. C.

Refinery - Tank Wagon Markets

Export Market Holds Industry's Attention; Domestic Markets Quiet

CLEVELAND, Nov. 17

DOMESTIC markets in most sections of the United States were quiet as November passed the middle mark. Export markets both at the Gulf and on the Pacific Coast were unsettled. Developments in export trade following the abandonment of price fixing by the export association were being watched by the oil industry with care.

Export prices at the Gulf dropped from 0.5 cent on kerosine to as much as 1.375 cents a gallon for gasoline and up to the close of business Nov. 15 there had been no foreign business placed that would support prices at the lower levels established by more or less nominal quotations.

Concern over the present unsettled export situation was equally as keen in trade circles in the central states as it was in the Mid-Continent and other districts more closely allied with the export market. Since many refiners look to the export market as an outlet for some of their surplus material, the question uppermost in the minds of the trade has been "What effect will the slash in export prices have on domestic markets?"

Aside from further downward price revisions in several Atlantic and Pacific seaboard districts, domestic gasoline markets were featureless. Prices rallied slightly in the Mid-Continent and the central states early in the week, only to lose later the ground they had gained.

Reductions of 0.25 cent were made in gasoline prices at Philadelphia, Baltimore, New York and in several New England districts.

Mid-Continent gasoline continued to disturb retail markets at several points on the northern Pacific coast. Standard Oil Co. of California reduced its posted prices 1.5 to 3.5 cents in several of the larger cities to meet the competition.

Mild weather continued to hamper the demand for home heating oils in all districts. Industrial demand for fuel oil also failed to increase. Prices, however, were generally unchanged for both classes of fuels.

Chicago Market Featureless; Prices Steady

Staff Special

CHICAGO, Nov. 15

THE Chicago resale market was dull and featureless during the week ended Nov. 15. Few changes were noted in the prices of most products. The spot demand for gasoline was light in most quarters, while warm weather hampered the demand for furnace oils.

Spot gasoline prices were a shade lower in a number of quarters. In other quarters sellers continued to report business at their old prices. Despite the lower prices, the feeling was fairly general that the spot market was practically on bottom unless there is another Mid-Continent crude reduction or a general reduction in retail gasoline prices. Sellers said that most buyers were not trying to beat down prices and were willing to pay the present levels whenever they needed gasoline.

Sales of U. S. Motor gasoline generally ranged from 4.50 to 4.875 cents after Nov. 13 and at 4.625 to 4.875 cents prior to that date. A number of marketers, who had bought some Motor at 4.375 cents, reduced their sales prices to 4.50 cents to meet competition, but said marketers continued to get 4.625 or 4.75 cents for their U. S. Motor and said they were buying at 4.375 to 4.50 cents. Only occasional purchases of U. S. Motor at under 4.375 for resale were reported. One seller said his price scale on Motor ranged from 4.50 to 4.75 cents, depending upon the benzol equivalent of the product. Some sales of U. S. Motor were reported for delivery into Michigan at 8 to 8.25 cents, which amounted to 4.50 to 4.625 cents on a Group 3 basis. Some of this gasoline was for shipment from Oklahoma.

Refiners' quotations on U. S. Motor gasoline were at 4.50 to 5.50 cents, with most of their sales at 4.50 to 4.875 cents. One refiner's quotations ranged from 4.50 to 4.75 cents, depending upon the territory into which the gasoline was to be shipped.

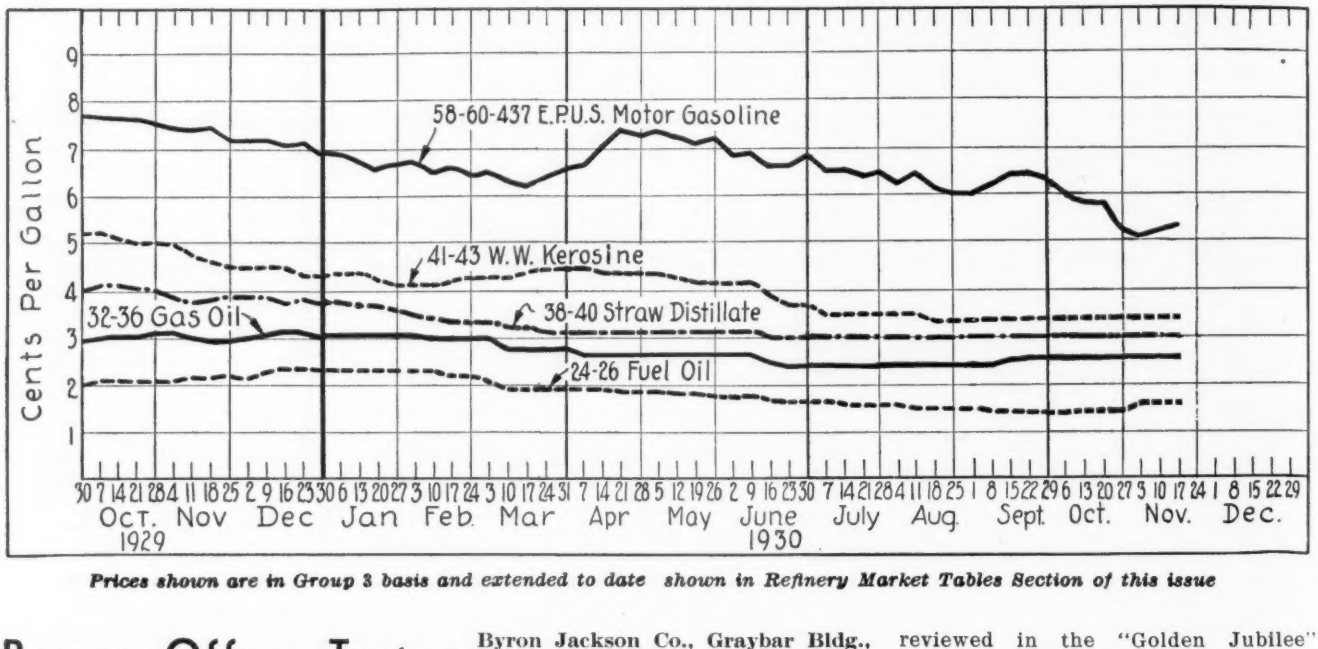
The higher gravity gasolines were quiet in most quarters and prices were off approximately 0.125 cent on all grades. Most sellers reported a better demand for their anti-knock product than for the ordinary gasoline.

Few signs of life were noted in the kerosine market, with all sellers reporting little spot demand at present. Prices showed no inclination to advance, but were kept from moving lower by the distillates, which held unchanged in the face of a rather light demand.

The warm weather of the past few weeks continued to hamper the demand for the low cold test burning oil, although there was little change in prices. Buyers generally reported that it still was hard to get any quantity of the better grades of zero gas and fuel oils for prompt shipment, although there was considerable of these products moving on contracts. Most sellers said they thought that the low cold test gas and fuel oils would show substantial increases in price as soon as the weather became cold.

Generally unsettled weather with precipitation likely over most of the Standard of Indiana territory the first part of next week, becoming fair and cold toward the end of the week, is the Weather Bureau's forecast for next week.

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P.U.S. Motor Gasoline
41-43 W.W. Kerosine
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Oct. Nov Dec Jan Feb Mar Apr May June July Aug. Sept. Oct. Nov. Dec.
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

Bureau Offers Tests Of Improved Products

WASHINGTON, Nov. 13.—A. S. McAllister, chief of the division of specifications of the Bureau of Standards told the Association of National Advertisers here Nov. 10 that the bureau would co-operate with trade associations to have tests made of new or improved products that are widely used; for example, motor oil and gasoline.

He had been asked what the bureau's facilities were for making such tests. He replied the facilities were great, that trade associations were welcome to use them and also to have the help of bureau men.

Mr. McAllister said that a trade association was free to have the results published in trade papers, both sides being given and without bias. He said that individuals might have tests made but that in such instances, the bureau reserved the right to publish the results in its own bulletins.

Byron Jackson Co., Graybar Bldg., New York, announces the return of John H. Baird as head of its export sales office at New York. Mr. Baird has been on a leave of absence due to illness.

Imperial Oil Celebrates 50th Anniversary

TORONTO—The development of the Canadian oil industry, from the time the first commercial oil well was drilled on the North American continent in 1858, at Petrolia, Ont., is reviewed in the "Golden Jubilee" number of the Imperial Oil Review, official publication of Imperial Oil Limited, Toronto. The company celebrates its 50th year of business this year.

On its 76 pages are told of the feeble beginnings of oil refining which developed from an output of lamp oil in 1862 to the present highly developed stage which permits the Imperial company to make 281 different products from a barrel of crude oil. It illustrates through pictures of smart and modern service stations how products are sold to the motoring public and how goods are advertised by symphony orchestras and costly opera stars by means of radio.

Shipments From Southern California

LOS ANGELES, Nov. 12

Bulk petroleum shipments from Southern California ports to Foreign and Atlantic Seaboard ports for week ended Nov. 1 totaled 1,249,508 barrels as compared with 1,022,041 barrels to these same ports for the previous week. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Kerosine	Fuel	Gas-Oil	Total
Pacific For.	65,546	949	40,895	25,004	321,573	.....	453,967
						Paint Thinner	
Atlantic Dom.	.....	539,606	.....	.....	.....	7,145	546,751
Atlantic For.	.....	248,790	.....	.....	.....	.....	248,790

Prices 10 Years Ago
Nov. 15, 1920

	Oklahoma	Penna.
58-60 U. S. Motor.....	19.50-20.00c	24.50-25.00c
80-84 Natural	20.00-21.00c	.....
Kerosine (42-43 Okla.; 47 w. w. Pa.)	8.50-9.00c	14.00-15 00c
Fuel Oil (24-26 Okla.; 36-40 Pa.)	$1.90-$2.00	9.00-9.50c
Crude (Okla. 35-35.9)	$3.50	$6.10
Chicago tank wagon (no state tax).....		27.00c

Prices A Year Ago
Nov. 18, 1929

	Oklahoma	Penna.
58-60 U. S. Motor.....	7.4972c	8.25-9.00c
Grade A Natural	6.75-7.00c	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)....	4.50-4.75c	7.25-7.75c
Fuel Oil (Okla. 24-26; Pa. 36-40).....	$0.85-$0.95	5.00-5.25c
Crude (Okla. 35-35.9)	$1.40	$3.05
Chicago tank wagon (including 3c tax).....		17.00c

Mid-Continent Refinery Markets

Neutral Oils, Bright Stocks Quoted Lower

Staff Special
TULSA, Nov. 15

REVISIONS downward in neutral oils and cylinder stocks prices, and a slowing up in gasoline demand late in the week featured the Mid-Continent refinery market the second week of November. The natural gasoline market remained almost stationary in price, with demand showing some improvement.

Prices for virtually all grades of neutral oils were changed, the reductions amounting to 0.25 to 1 cent, depending on the grade. The price for 200 vis. No. 3 oil was not changed as far as the low of the price range was concerned, but the top of the range was reduced 0.50-cent.

The zero-cold test bright stock was reduced 1 cent, while the 190-200 vis. D, 210 bright stock was reduced 3 cents. This grade, however, is made by only one or two refiners.

The stiffer competition from all districts, coupled with the lower crude oil prices caused the general revision in prices, refiners said.

The gasoline market the first part of the week showed some improvement in Kansas, Oklahoma and Texas. Orders were comparatively good in volume, and more spot buying was reported. As the week progressed, however, the volume of buying, both spot and on contract, decreased. The slower demand caused a slight dip in prices in a few quarters before the end of the week.

A few refiners who must keep their production moving due to lack of storage space, raised their quotations early in the week as a result of the improved demand, but Nov. 15 were back to about the levels of the previous week.

The withdrawal of export prices by the Export Petroleum Association, Inc., had little actual effect in the Mid-Continent. Two or three refiners in north Texas have contracts with one member of the association for a specified quantity of gasoline per month, the price received being based on the Gulf export price. When competitive prices were re-established in that market they were considerably lower than had been the association's posting, which naturally caused a decidedly lower netback to the refiners.

The contracts are understood to expire December 31, and it was hinted by one refiner that the buyer had intimated he was not overly anxious to have the gasoline. The result may be a sizable reduction in the amount shipped the next six weeks.

In Arkansas the price for differential shipment was lowered 0.25-cent late in the week, but the North Louisiana refiners had failed prior to the close of business Nov. 15 to meet that price. The North Texas refiners continued to cut deeply into the gasoline business in the southeast, several refiners reported.

The uncertainty in the gasoline market around the first of the month retarded buying of natural gasolines somewhat. Whereas several large purchasers normally buy their requirements for the entire month, this time only a percentage of the normal business was placed, with the result considerable buying was done just prior to the middle of the month.

The Standard Oil Co. of Indiana was reported to have bought a quantity of natural gasoline early in the week. This is probably the second time this company has been in the market for the past several years. Other major purchasers sought options on quantities ranging from 50 to 100 cars.

One major manufacturer reported Nov. 15 that so far in November his stocks had been reduced almost 2,000,000 gallons, and that indications were his stocks would be reduced almost 4,000,000 gallons before the end of the month. While the statistical situation remained excellent he thought there was little probability prices would move much if any above U. S. Motor gasoline prices. On the other hand, it was doubtful if prices would move much lower unless U. S. Motor prices slipped considerably, he said.

Kerosines continued inactive. Demand was light in all districts with the possible exception of Louisiana and Arkansas. Prices remained unchanged primarily because of the upward pressure of distillates. In Louisiana and Arkansas curtailed production kept kerosines in good shape.

Distillates were less active due to the milder weather which had prevailed over the middle west. Reports late in the week of snows and a cold wave sweeping down from the north, indicated there might be an improved demand for distillates within the next week or 10 days. Prices were unchanged.

Some improvement was noted in demand for zero cold test fuel oils regardless of gravity. The 28-30 zero grade was scarce for spot buying but prices were generally unchanged. Many buyers have gotten away from the gravity specification and apparently are now more concerned with the viscosity, flash and B. t. u. specifications, as well as the cold test.

The ordinary grades of fuel were freely offered in all districts. In North Texas some low gravity, 25 to 30 cold test fuel was offered at 35 and 40 cents a barrel by brokers late in the week. This price was not considered representative of the going market in view of the asphaltic content of the fuel.

Announces New Gasoline

PHILADELPHIA, Nov. 14.—Atlantic Refining Co. has announced a new gasoline to be known as Atlantic White Flash. The product will be advertised as a highly volatile, anti-knock gasoline which is to be sold at the competitive price.

Plans for Diesel Fuel Research Progressing

WASHINGTON, Nov. 17.—Negotiations among technical societies, representatives of the manufacturers of Diesel engines and the Bureau of Standards looking to a research by the Bureau of Standards to disclose the properties of Diesel engine fuel oils, including oils for high speed Diesels, have gone to the point of suggestions as to the program to be followed in the course of that research. The financing arrangements, however, have not yet been made.

Petroleum refiners are represented in the matter by their technical men serving on the committees of the various technical societies interested. The aim is to find out what are the things in the fuel oils of the sort indicated that make them desirable, so that specifications may be made that will show the users of such oils the critical points to be considered.

The preliminary work is being carried on by an organization called the Committee on Diesel Engine Fuel Oil Research, of which W. H. Butler of the Standard Oil Co. of New Jersey is the secretary. Other oil men on the committee are A. L. Clayden, of the Sun Oil Co., T. G. Delbridge of the Atlantic Refining Co. and K. G. McKenzie of The Texas Co., president of the A.S.T.M. The committee met last week in New York to discuss the research program.

The fundamental idea is that before specifications for Diesel fuels are written or put into relatively permanent form there should be data indicating what properties are desirable. The feeling is that whatever specifications for Diesel oil are in use are based upon theories which, upon a rigid research, may be found to be of little if any value at all. It is pointed out that specifications for gasoline were written before research had been made to determine what properties were desirable. The result was that much was made of the initial and end points instead of the points when 10 per cent and 90 per cent were distilled over.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect November 17

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	5.2500	(Wt. Avg.)	5.2500	(Wt. Avg.)	.....
**Oklahoma	4.625–5.00	.....	4.625-5.00	.....	.....
Kansas	4.875–5.375	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	5.5278	(Wt. Avg.)	Kansas only.
North Texas	4.625–4.75	.....	4.625–4.75	.....	.....
West Texas	4.625–4.75	.....	4.625–4.75	.....	.....
Louisiana-Arkansas	4.75 –5.00	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	5.25 –5.50	.....	State or differential haul.
Indiana-Illinois	4.50 –4.75	.....	..... *	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

**Price of this 58-60, 437 e.p. gasoline, which in most instances meets full U. S. Motor gasoline specifications, represents quotations and sales prices of four refiners having 7% of the refining capacity of Oklahoma. These four refiners are not reporting their prices for use in compiling weighted averages on U. S. Motor gasoline.

Chicago Resale Market

CHICAGO, Nov. 15

THE Chicago market was quiet last week. Spot gasoline was inactive in most quarters; prices were a shade lower. Sales of U. S. Motor generally were at 4.50 to 4.875 cents the latter half of the week, compared with 4.625 to 4.875 cents earlier. Several marketers said they were unable to make a profit at 4.50 cents, and continued to get some business at 4.625 and 4.75 cents. Kerosine was dull and unchanged in price. The warm weather continued to hamper the demand for furnace oils, although spot prices were steady.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts, such as North and West Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices Nov. 17	**Prices Nov. 10**	**Prices Nov. 3**
58-60 U. S. Motor, 437 e.p.	4.50 – 4.875	4.625– 5.00	4.50 – 5.125
†56-62 400-437 e.p. anti-knock gasoline	5.375– 6.50	5.375– 6.50	5.50 – 6.75
60-62 437 e.p. gasoline	4.625– 4.875	4.75 – 5.125	4.625– 5.125
60-62 400 e.p. gasoline	4.875– 5.25	5.00 – 5.375	5.00 – 5.50
64-66 375 e.p. gasoline	5.625– 5.875	5.625– 6.00	5.625– 6.125
68-70 350-360 e.p. gasoline	6.25 – 6.50	6.25 – 6.50	6.50 – 6.75
*Domestic Aviation Gasoline	7.50 – 7.75	7.50 – 7.75	8.00 – 8.25
41-43 w.w. kerosine	3.00 – 3.25	3.00 – 3.375	3.00 – 3.375
42-44 w.w. kerosine	3.25 – 3.625	3.25 – 3.75	3.25 – 3.75
38-40 straw distillate	2.875– 3.00	2.875– 3.00	2.875– 3.00
32-36 ordinary dark gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 dark zero gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
32-36 straw zero gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
28-30 zero fuel oil (per bbl.)	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
28-30 fuel oil (per bbl.)	$0.80 –$0.85	$0.80 –$0.85	$0.80 –$0.85
24-26 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
18-22 fuel oil, low sulfur (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
18-22 fuel oil, high sulfur zero (per bbl.)	$0.525–$0.575	$0.525–$0.575	$0.525–$0.575
14-16 fuel oil (per bbl.)	$0.425–$0.475	$0.425–$0.475	$0.425–$0.475

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Over 45% benzol equivalent. Prices represent quotations and sales.

Weighted Average Prices

OKLAHOMA

	Nov. 17		**Nov. 10**		**Nov. 3**	
	No. of Cars	**Price**	**No. of Cars**	**Price**	**No. of Cars**	**Price**
58-60 U. S. Motor, 437 e.p.	2	5.2500	..	4.875–5.375 (See note)	..	4.75–5.375 (See note)
*58-60 437 e.p. gasoline	..	4.625–5.00	..	4.75 –5.375	..	4.625–5.375
60-62 437 e.p. gasoline	..	5.00–5.50 (See note)	..	5.00 –5.50 (See note)	2	4.8750
60-62 400 e.p. gasoline	..	5.50–5.75 (See note)	..	5.50 –5.75 (See note)	..	5.75–6.25 (See note)
64-66 375 e.p. gasoline	..	5.75–6.00 (See note)	..	5.75 –6.25 (See note)	..	6.50 (See note)

KANSAS

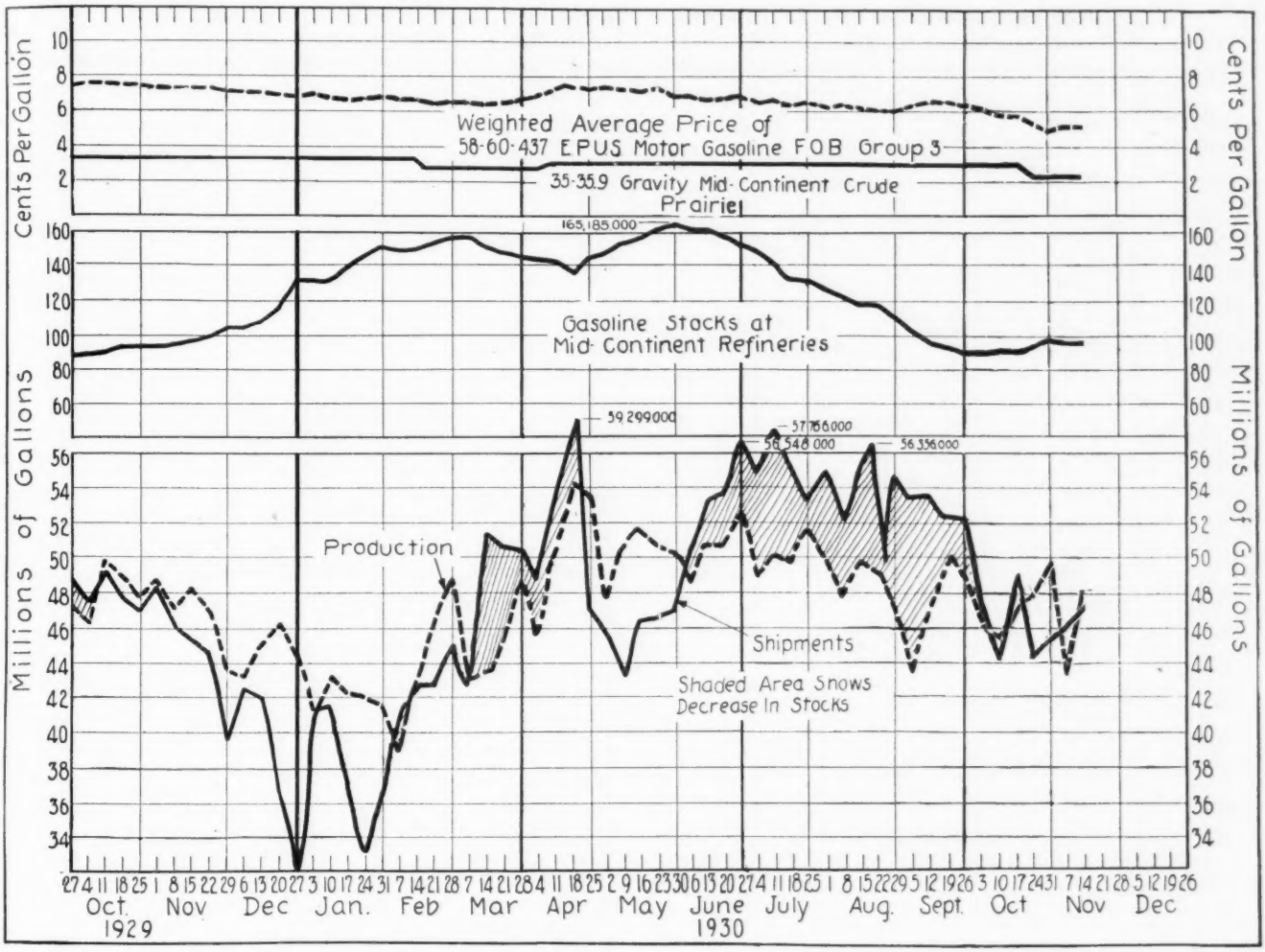
	Nov. 17		**Nov. 10**		**Nov. 3**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of Cars**	**Price**
58-60 U. S. Motor, 437 e.p.	9	5.5278	10	5.5800	7	5.6287

Note: No sales reported for the gasoline marked "see note" on the dates so marked; prices shown on such dates represent majority of quotations only.

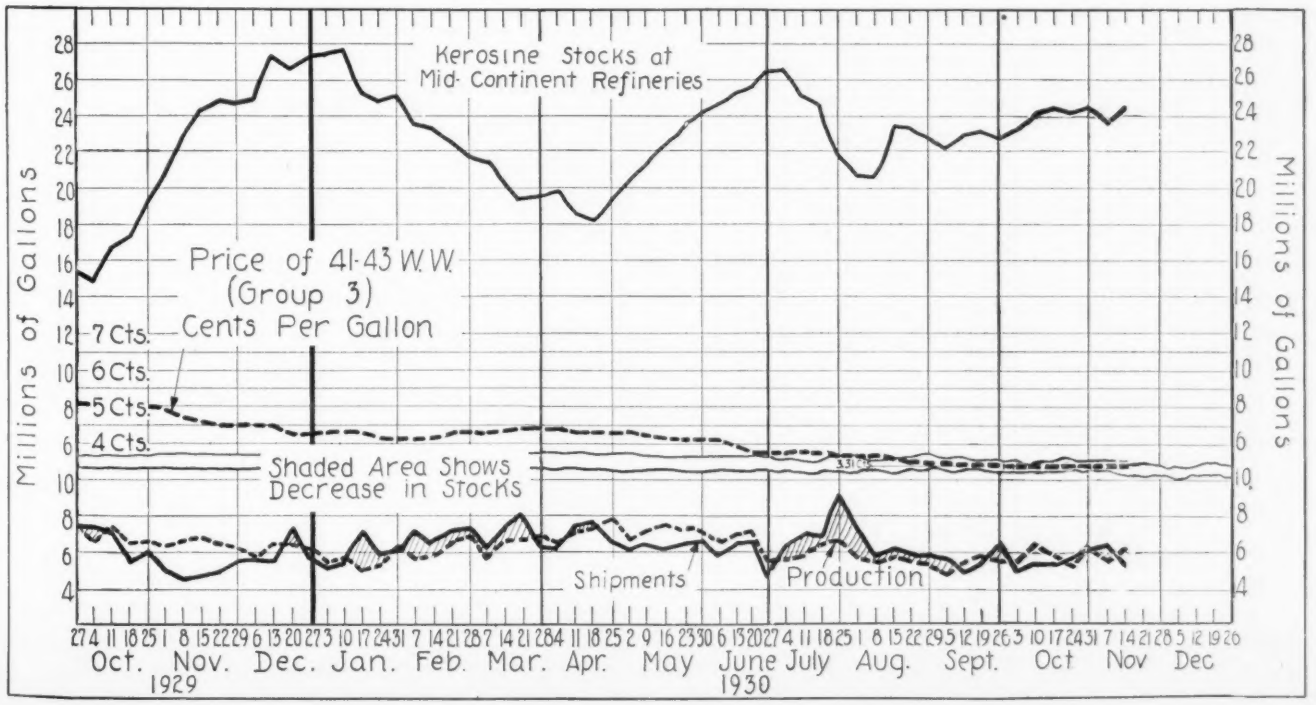
*Price of this 58-60, 437 e. p. gasoline, which in most instances meets full U. S. Motor gasoline specifications, represents quotations and sales prices of four refiners having 7% of the refining capacity of Oklahoma. These four refiners are not reporting their prices for use in compiling weighted averages on U. S. Motor gasoline.

Barometer of Mid-Continent Refinery Market—Week Ending November 14

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 74



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Nov. 17	Prices Nov. 10	Prices Nov. 3
48-50 450 e.p. naphtha...	4.875– 5.00	4.875– 5.00	4.875– 5.00
50-52 450 e.p. naphtha...	4.875– 5.00	4.875– 5.00	4.875– 5.00
56-58 450 e.p. gasoline...	4.625– 5.00	4.875– 5.00	4.875– 5.00
58-60 450 e.p. gasoline...	4.625– 5.00	4.875– 5.00	4.875– 5.00
64-66 390 e.p. gasoline...	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
68-70 350-360 e.p. gasoline	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
‡Domestic Aviation Gasoline.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	6.00 – 6.50	6.00 – 6.50	6.50 – 7.00
54-56 Naphtha.....	6.25 – 7.00	6.25 – 7.00	6.50 – 7.00
58-60 U.S. Motor 437 e.p.	6.50 – 6.75	6.50 – 6.75	6.50 – 7.00
60-62 400-410 e.p. gasoline	6.625– 7.25	6.75 – 7.25	7.00 – 7.25
64-66 390 e.p. gasoline....	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
68-70 350-360 e.p.....	8.00 – 8.75	8.00 – 8.75	8.25 – 8.75

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point.....	9.00	9.00	9.00

KANSAS (F. o. b. refinery Kansas destination)

60-62 437 e.p. gasoline....	5.75 – 6.00	6.00 – 6.25	6.00 – 6.25
60-62 400 e.p. gasoline....	6.00 – 6.25	6.25 – 6.50	6.25 – 6.50
64-66 375 e.p. gasoline....	6.50 – 6.75	6.75 – 7.00	6.75 – 7.00

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline....	4.50	4.50	4.50
58-60 450 e.p. gasoline....	4.50	4.50	4.50
58-60 U.S. Motor 437 e.p.	4.625– 4.75	4.75	4.50 – 4.75
60-62 400 e.p. gasoline....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
64-66 390 e.p. gasoline....	5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
64-66 375 e.p. gasoline....	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
68-70 350-360 e.p. gasoline	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	4.50	4.50	4.50
58-60 437 e.p. gasoline....	4.50	4.50	4.50
58-60 U.S. Motor 437 e.p. gasoline.....	4.625– 4.75	4.625– 4.75	4.625

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p	5.50	5.75	5.75

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	5.25	5.75	5.75

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	8.50 –11.00	9.50 –11.50	8.75 –12.50
54-58 U.S. Motor, for outside state shipment....	7.25 – 8.50	7.50 – 9.00	7.50 – 9.00
58-61 375-400 e.p. gasoline	11.00 –12.00	11.50 –12.50	11.00 –13.50
42-45 Engine Distillate 445-480 e.p.....	8.50 – 9.50	8.50 –10.00	8.50 –10.00

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	4.50	4.50	4.50
Grade A, 72-79.9, 90% Recovery.....	4.75	4.50–4.75	4.50
Grade BB, 84-92, 85% Recovery.....	4.50	4.50	4.50
Grade B, 76-83.9, 85% Recovery.....	4.50	4.50	4.50
Grade C, 80-92, 78% Recovery.....	4.50	4.50	4.50

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery.....	4.50	4.50–4.625	4.50
Grade A, 72-79.9, 90% Recovery.....	4.75	4.50–4.75	4.50
Grade BB, 84-92, 85% Recovery.....	4.50	4.50	4.50
Grade B, 76-83.9, 85% Recovery.....	4.50	4.50	4.50
Grade C, 80-92, 78% Recovery.....	4.50	4.50	4.50

NORTH LOUISIANA (F. o. b. Monroe District)

	Prices Nov. 17	Prices Nov. 10	Prices Nov. 3
Grade AA.....	†4.75	†4.75	†4.75
Grade BB.....	†4.75	†4.75	†4.75
Grade C.....	†4.75	†4.75	†4.75

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	6.50 – 7.25	6.50 – 7.25	7.00 – 8.00

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w. w. kerosine.....	4.75 – 5.00	4.625– 5.00	4.75 – 5.00
46 w.w. kerosine.....	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50
47 w. w. kerosine.....	5.25 – 5.75	5.25 – 5.75	5.375– 5.75
300 mineral seal.....	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w. w. kerosine.....	3.125– 3.50	3.125– 3.50	3.125– 3.50
42-44 w. w. kerosine.....	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00

KANSAS (F. o. b. refinery Kansas destination)

41-43 w. w. kerosine.....	3.50 – 4.00	3.75 – 4.00	3.75 – 4.00
42-44 w. w. kerosine.....	4.25 – 4.50	4.50 – 4.75	4.50 – 4.75

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w. w. kerosine.....	3.00	3.00	3.00
41-43 w. w. kerosine.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00
42-44 w. w. kerosine.....	4.25	4.25	4.25

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00

CALIFORNIA (F. o. b. California refineries)

38-40 w. w. kerosine.....	5.00 – 6.00	5.00 – 6.00	5.25 – 6.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.		(Viscosity at 70° F.)	
200 No. 3 Assoc. Filt.....	16.75 –18.00	16.75 –19.00	17.25 –19.00
180 No. 3 Assoc. Filt.....	14.00 –15.00	14.00 –16.00	14.00 –16.00
150 No. 3 Assoc. Filt.....	10.75 –12.00	10.75 –12.00	11.00 –12.00
		(Non Viscous)	
34 Grav. 330-340 Flash...	5.50 – 6.50	5.50 – 6.50	5.50 – 6.50

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color		(Viscosity at 100° F.)	
100—No. 2.....	5.50	5.50 – 6.00	5.50 – 6.00
150—No. 3.....	6.75 – 7.00	7.50	7.50
150—No. 4.....	6.50	7.00	7.00
180—No. 3.....	8.00 – 8.50	8.00 – 9.00	8.00 – 9.00
180—No. 4.....	7.75 – 8.00	8.50	8.50
180—No. 5.....	7.50	8.00	8.00
200—No. 3.....	9.75 –10.00	9.75 –10.50	9.75 –10.50
200—No. 4.....	9.25 – 9.50	10.00	10.00
200—No. 5.....	8.75 – 9.00	8.75 – 9.25	8.75 – 9.25
220—No. 3.....	11.50	12.50	12.50
220—No. 4.....	11.00	12.00	12.00
220—No. 5.....	10.00	11.00	11.00
240—No. 3.....	13.50	13.50 –14.00	13.50 –14.00
240—No. 4.....	12.50	12.50 –13.00	12.50 –13.00
240—No. 5.....	11.50	12.00	12.00
280—No. 3.....	15.50	16.00	16.00
280—No. 4.....	14.50	15.00	15.00
280—No. 5.....	13.50	14.00	14.00

†Prices nominal ††Only one refiner quoting *Quotations only

****Represents Both Sales and Quotations.**

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices Nov. 17	Prices Nov. 10	Prices Nov. 3
	(Viscosity at 100° F., pour test 0)		
100—No. 2 Pale	6.00 – 6.25	6.00 – 6.25	5.50 – 6.00
200—No. 3 Pale	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 3 Pale	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
500—No. 3½ Pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
750—No. 4 Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
1200—No. 4 Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
2000—No. 4-5 Pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
300—No. 5½ Red Oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500—No. 6 Red Oil	9.75 –10.25	9.75 –10.25	9.75 –10.25
750—No. 6 Red Oil	11.25 –11.75	11.25 –11.75	11.25 –11.75
1200—No. 5-6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
2000—No. 6 Plus Red Oil	15.50 –16.00	15.50 –16.00	15.50 –16.00

‡CALIFORNIA (F. o. b. California refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Bright stock prices represent quotations to domestic jobbers only).

190-200 Vis. D at 210° Brt. St.	25.00	28.00 –30.00	28.00 –30.00
150-160 Vis. D at 210° Brt. St., 0-10 cold test	20.00 –21.00	21.00 –23.00	21.00 –23.00
150-160 Vis. D at 210° Brt. St., 10-25 cold test	19.00 –20.00	19.00 –21.00	20.00 –21.00
150-160 Vis. D Brt. Stock, 25-40 cold test	18.00 –19.00	18.00 –19.00	19.00 –20.00
150-160 Vis. E 210° Brt. St.	17.00 –19.00	17.00 –18.00	18.00 –20.00
600 St. Ref. Olive Green	7.50 – 8.00	8.00	8.00
600 St. Ref. Dark Green	7.50 – 8.00	8.00	8.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	9.00 – 9.50	9.50 –10.00	†9.50 –11.00
650 Steam Refined	14.00 –16.00	14.00 –16.00	14.50 –16.00
600 Flash	16.00 –18.00	16.50 –18.00	16.50 –19.00
630 Flash	24.00 –25.00	24.00 –26.00	24.00 –28.00
600 Warren E	†15.00 –17.00	15.50 –17.00	15.50 –17.00
600 Oil City E	†15.00 –16.00	15.00 –16.00	15.00 –16.50
600 D Filtered	18.50 –19.50	18.50 –19.50	18.50 –19.50
Cold Test Stock, 140-150 vis. at 210°, 540-550 flash.			
No. 8 color, below 35 pour test	20.50 –23.50	21.00 –23.50	22.00 –23.50
No. 8 color, above 35 pour test	18.50 –20.00	18.50 –20.00	19.00 –20.00
No. 6-6½ color diluted, 40-50 pour test	†17.50 –21.00	†17.50 –21.00	†18.50 –21.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	2.15 – 2.25	2.125– 2.25	2.125– 2.25
124-126 white crude scale, a.m.p.	2.18 – 2.25	2.125– 2.25	2.125– 2.25

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	2.00 – 2.125	2.125– 2.25	2.25

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	3.50 – 3.75	3.625– 3.875	3.75 – 4.00
30-34 fuel oil	3.50 – 3.75	3.625– 3.75	3.75 – 4.00
28-32 fuel oil	3.50 – 3.75	3.625– 3.75	3.75 – 4.00

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Nov. 17	Prices Nov. 10	Prices Nov. 3
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
36-38 straw distillate	2.875– 3.00	2.875– 3.00	2.875– 3.00
32-36 straw gas oil	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
32-36 straw gas oil zero	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
32-36 dark gas oil	2.125– 2.375	2.125– 2.375	2.125– 2.375
32-36 dark gas oil zero	2.625– 2.875	2.625– 2.875	2.625– 2.875
28-30 zero fuel oil(per bbl.)	$0.85 – 0.95	$0.85 – 0.95	$0.85 – 0.95
28-30 fuel oil (per bbl.)	$0.80 – 0.825	$0.80 – 0.825	$0.80 – 0.825
26-28 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
24-26 fuel oil (per bbl.)	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70
22-26 fuel oil (per bbl.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
18-22 fuel oil (per bbl.)	$0.475– 0.525	$0.475– 0.525	$0.475– 0.525
16-20 fuel oil (per bbl.)	$0.425– 0.475	$0.425– 0.475	$0.425– 0.475
14-16 fuel oil (per bbl.)	$0.40 – 0.45	$0.40 – 0.45	$0.40 – 0.45

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
36-38 straw distillate	3.00	3.00	3.00
32-36 straw gas oil	3.00	3.00	3.00
18-22 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
10-14 fuel oil (per bbl.)	$0.55 – 0.65	$0.55 – 0.65	$0.55 – 0.65

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	3.00	3.00	3.00
38-40 p.w.treated distillate	3.125– 3.25	3.125– 3.25	3.125– 3.25
32-36 gas oil, cracked	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
32-36 St. reduced gas oil	2.125– 2.375	2.125– 2.375	2.125– 2.375
24-26 fuel oil (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
20-24 fuel oil (per bbl.)	$0.45 –$0.50	$0.45 –$0.50	$0.45 –$0.50
18-22 fuel oil (per bbl.)	$0.40 –$0.45	$0.40 –$0.45	$0.40 –$0.45

****WEST TEXAS** (F. o. b. West Texas refinery, or unrestricted shipment)

34-38 gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
30-32 gas oil	1.875– 2.125	1.875– 2.125	1.875– 2.125
28-30 zero gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
18-22 fuel oil (per bbl.)	$0.50 –$0.60	$0.50 –$0.60	$0.50 –$0.60

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	*3.25	*3.25	*3.25
32-36 gas oil, straw	*3.25	*3.25	*3.25
14-16 fuel oil (per bbl.)	$0.75 –$0.85	$0.75 –$0.85	$0.75 –$0.85

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.25	3.25	3.25
32-36 dark gas oil	3.25	3.25	3.25
28-30 gas oil	3.00	3.00	3.00
20-24 fuel oil (per bbl.)	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
9-12 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.35 –$0.60	$0.35 –$0.60	$0.45 –$0.60
14-18 Bunker oil (per bbl.)	$0.65 –$0.85	$0.65 –$0.85	$0.70 –$0.85
30-34 gas oil (per bbl.)	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05
27 Plus Diesel oil (per bbl.)	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery. In tank cars ⅛c t. ¾c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50	7.50	7.50
Cream White	6.50	6.50	6.50
Light Amber	3.375– 3.625	3.375– 3.625	3.375– 3.625
Amber	3.125– 3.375	3.125– 3.375	3.125– 3.375
Red	2.875– 3.00	2.875– 3.00	2.875– 3.00

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

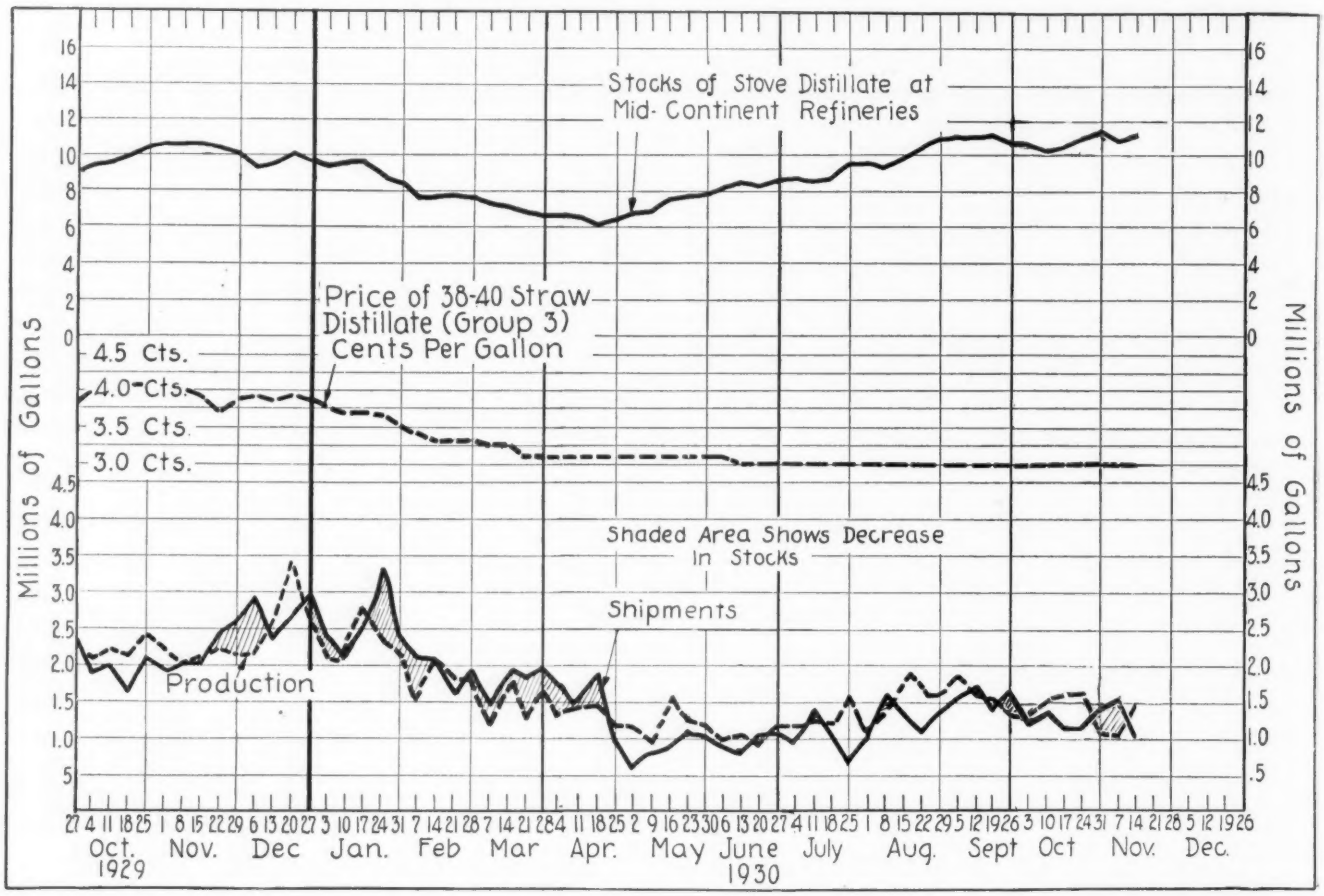
(Per ton in car lots)

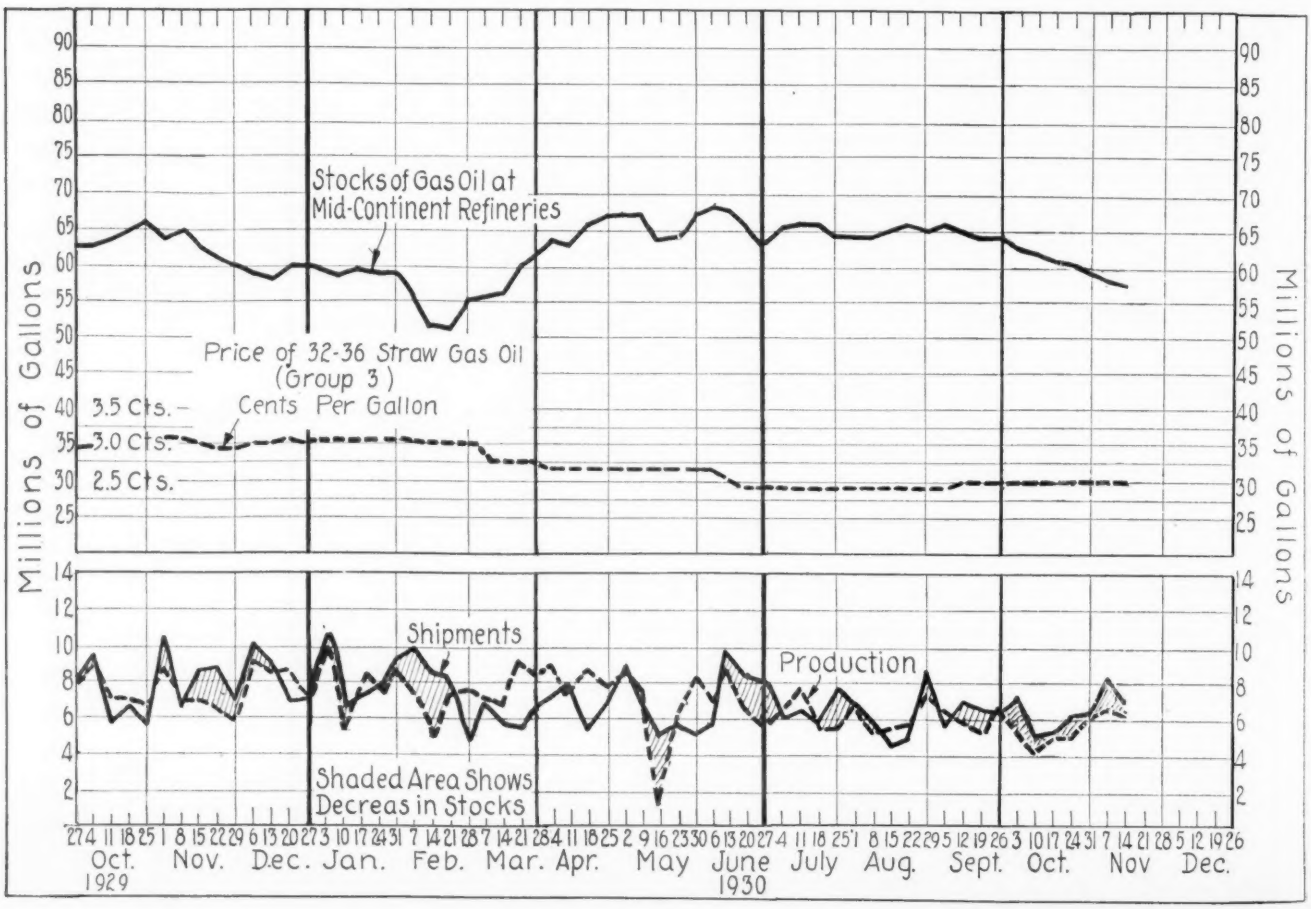
Lump	$4.50 –$5.00	$4.50 –$5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

****Represents Both Sales and Quotations.**

Barometer of Mid-Continent Refinery Market—Week Ending November 14

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.5 Cts.
4.0 Cts.
3.5 Cts.
3.0 Cts.
Shaded Area Shows Decrease In Stocks
Shipments
Production
Millions of Gallons
Oct. Nov. Dec Jan. Feb Mar Apr. May June July Aug. Sept Oct Nov. Dec.
1929
1930


Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Shipments
Production
Shaded Area Shows Decreas in Stocks
Millions of Gallons
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov Dec.
1929
1930

You and Your Employees are Standing on an Undeveloped

GOLD MINE

—in possibilities for profits from transmission & differential "changes"

By a recent field study of the selling of lubricants, Graigrene has worked out a Resale Method which jobbers can successfully use in selling their dealers and filling stations. Employees of dealers and filling stations can use it in getting motorists to regularly change their transmission and differential lubrication making their cars run easier, more efficiently and with less friction. Sales and profits on what now is considered a side-line will be thereby substantially increased.

Lubrication sales have already been tripled and quadrupled by the jobbers and dealers using this method—and it has won the whole-hearted co-operation of all their employees behind it.

We will gladly tell any jobber how, by using this Resale Method, he can show his dealers and their employees, that a single Graigrene transaction will produce profits equal to those secured from the sale of 50 gallons of gas, which requires from 5 to 10 transactions, and more time and labor.

A 100% quality lubricant with a positive cold test of 40° to 60° below Zero and a viscosity of over 300 at 210°.

SEND COUPON TODAY FOR FULL INFORMATION ON THIS NEW METHOD and let us show you how to make your grease business your most profitable department.

GRAIGRENE

[PRONOUNCED GREY-GREEN]

Viscosity Oil Company
1101 W. 37th Street, Chicago

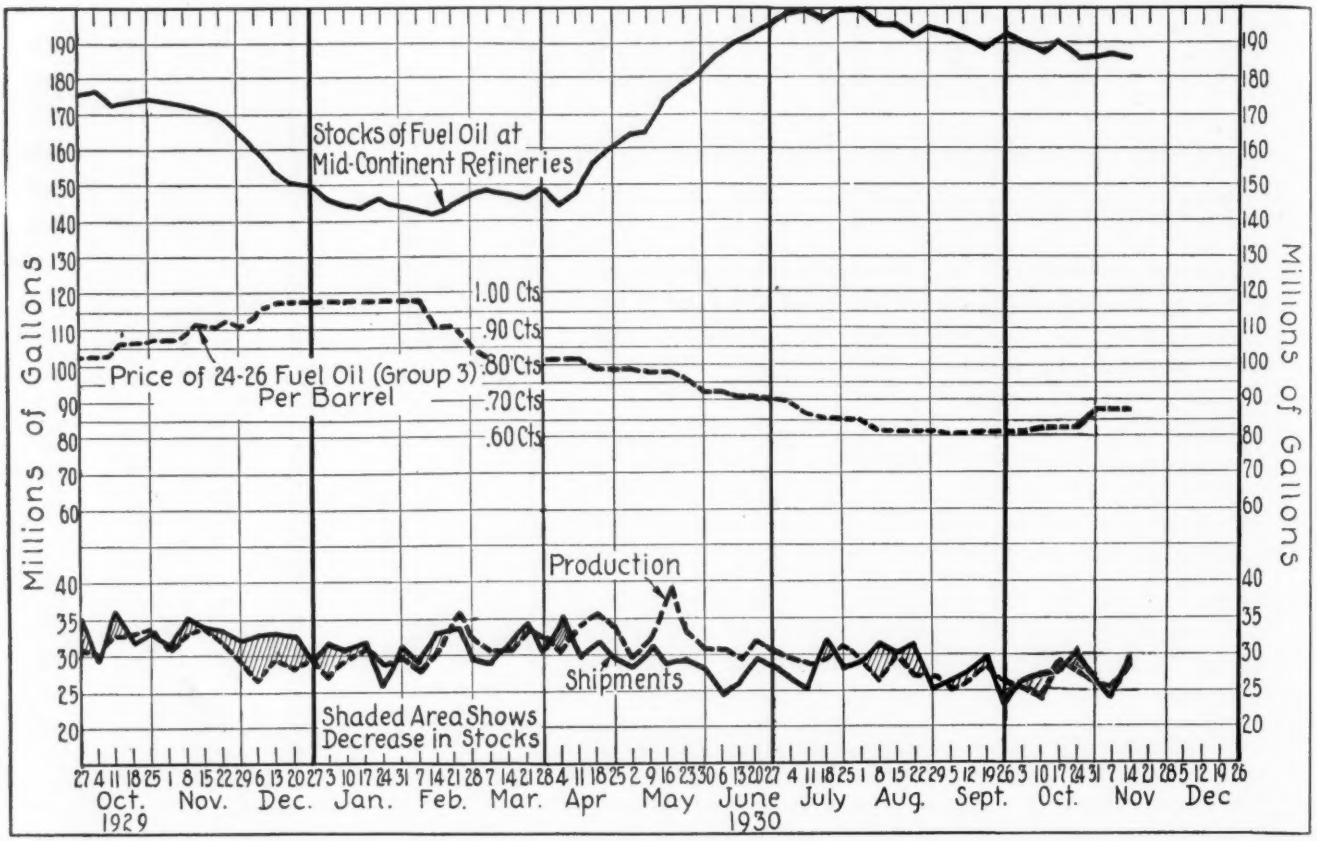
Send me full details of your Resale Method on how to create greater interest on the part of the dealer and the motorist to more frequent transmission and differential changes.

Company..... **Name**.....

Address..... **City**.....

Barometer of Mid-Continent Refinery Market—Week Ending November 14

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Retail Price Cutting Unsettles Market

LOS ANGELES, Nov. 15

CALIFORNIA refinery markets generally were unsettled the past week due largely to the disturbed condition of retail gasoline markets.

Coincident with the report that Standard of California had made further concessions to its resellers in western Washington, two southern California refiners shaded in-state motor fuel quotations 0.75-cent per gallon.

Interest in the local export market was eclipsed by the turn of domestic quotations. One independent refiner said he had secured a contract from a Japanese steamship line for its bunker fuel oil requirements for 1931. The quantity of oil to be delivered under this order approximated 350,000 barrels and the price was said to be better than $0.65 per barrel.

An Australian buyer was reported in the market seeking a contract for 1000 drums of 400 e. p. gasoline per month for a period of one year. The offered price was reported as 14 cents per imperial gallon f.o.b. the dock, San Pedro harbor.

Failure on the part of several independent refiners to handle large quantities of surplus gasoline flooding the local domestic market, resulted in a shading of tank truck and trailer prices by two refiners.

Late in the week these companies were reported to be offering motor fuel at 11.50 cents per gallon, 3 cents tax included. This figure is 0.75-cent under the low of the previous week and 0.25-cent under the minimum quotation during the present period of depressed prices.

Other refiners indicated they would not meet these low figures until it was absolutely necessary. However, they expressed the opinion that a wholesale price reduction was imminent.

The downward trend in gasoline prices spread into adjoining states. One refiner reported a jobber in Utah had been approached by several California refiners—including a major company—offering to shade 7.50 cents. The trade thought gasoline could be bought for consumption outside the state at between 7.25 and 8.50 cents.

Other refinery products were decidedly sluggish and spot sales were scattered. Independent refiners, pressed for storage, were reported offering fuel oil as low as $0.30 to $0.35 per barrel in large quantities.

Bunker fuel oil continued to bring satisfactory price to those companies equipped to handle distribution of this product.

A light demand for natural gasoline brought more quotations down to 6.50 cents. Traders were confident this figure could be shaded on a firm offer.

Colder weather brought about a better demand for gas oil and Diesel oil. Several tank cars of gas oil moved at $0.85 to $0.90 per barrel.

Pennsylvania Markets

Kerosine Up 0.125 Cent

CLEVELAND, Nov. 17.—A better demand for kerosine and a reversal in the trend of prices for this commodity featured the Pennsylvania market late last week. There was little reaction in refined oil prices to the reduction in crude on Wednesday, which was the third 15-cent cut Pennsylvania crude has been given within a period of six weeks.

Generally speaking Pennsylvania refiners reported their stocks of refined oils were in good shape. Several plants are shut down and refiners have been drawing on storage to meet current demand.

Active demand from major eastern seaboard distributors coupled with increased call from the jobbing trade was credited with causing the kerosine market to turn about face. The buying was in sufficient volume to take up practically all of the low priced material. Odd lots of 45 w.w. kerosine still was available at 4.625 cents as the week ended, according to reports of one or two sellers, although buyers willing to pay this price asserted they were unable to shade 4.75 cents.

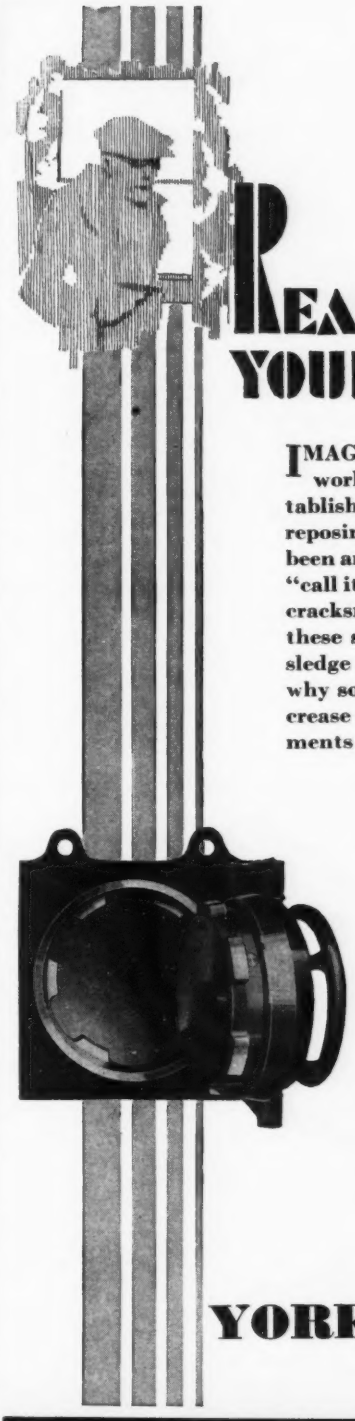
Sellers' reports regarding gasoline movement varied somewhat. Some reported business slow while others stated they were having no difficulty in moving their current production. Prices for all grades were generally unchanged.

Fuel oil was sluggish. There was no surplus of material reported in the field but sellers generally reported there was practically no market for the small volume of material available. What little demand there was specified low cold test fuels. Prices for the ordinary grades were off 0.125 to 0.25 cent a gallon.

The wax market was reported in better shape. Inquiries from New York dealers were more numerous. Resale agents in the Pennsylvania field said that only small lots of either 122-124 A.m.p. or 124-126 A.m.p. were available at less than 2.25 cents. Some sellers were turning a deaf ear to all bids of less than 2.375 cents.

Neutral oils, cylinder stocks and bright stocks were quiet. Little change was noted in prices for these oils but if anything they still leaned toward the downside.

The Foxboro Co., Foxboro, Mass., has appointed A. H. Shafer manager of its Pittsburgh office, succeeding H. S. Gray who is now office manager at the home plant.



REAL SAFETY FOR YOUR CASH RECEIPTS

IMAGINE the feelings of an ambitious, hard-working burglar when he breaks into your establishment, only to find that all the cash is safely reposing in a York Round Door Chest. If he has been around at all, he knows that he might as well "call it a day" right then for even the most expert cracksmen have never been able to open one of these sturdy safes. Rough methods like using a sledge hammer don't help a bit—which explains why so many large companies find a decided decrease in attempted robberies of their establishments after adopting the York Chest.

The York Chest, when installed, is anchored in a solid concrete block, giving complete protection against fire. It cannot be removed from the building or attacked at any point except the heavy, thief-proof door. The saving in burglary insurance alone will pay for the York Chest in a reasonable length of time.

Illustrated folder describing the York Round Door Chest in detail will be sent gladly on request.

YORK SAFES

YORK SAFE & LOCK CO.

York, Pennsylvania

NATURAL GASOLINE

Grades A · AA · B · BB · C

CONTRACT OR SPOT

WILLOCK OIL CORPORATION

First National Bank Building · Phone Atlantic 3110

PITTSBURGH, PA.

52 Years Experience · It Counts

Eastern Domestic Markets

Gasoline Prices Continue Downward Trend

Staff Special
NEW YORK, Nov. 15

EASTERN gasoline markets were under pressure again in the week ended Nov. 15. Sellers reports brought to light pronounced price cutting in the principal marketing districts along the seaboard, thus dispelling the hope previously entertained by some traders that the bottom had been reached.

The revision of wholesale prices by several of the major companies a week ago was accepted by many sellers as a level under which they could form a still lower line of prices. This new recession did not assume the vigorous aspect which hit the market several weeks ago, yet it was plainly visible.

One major company in the New York harbor district which has followed the receding of U. S. Motor gasoline with a disposition to take all the business possible the past week has refused to carry the fight below the 7-cent figure, and has undertaken to stand on the quality of its product to attract available business. This company has a material with 90 initial and a 395 to 405 e.p. which is to be desired for use in cold weather. However, the sellers of U. S. Motor gasoline with a higher boiling range have not adopted a similar position. The majority of sellers of regular U. S. Motor gasoline, generally speaking, offered this material at 6.75 cents and reported this price was necessary to attract any business.

One seller reported a sale of ten cars of gasoline at 6.625 cents in an instance where an unfavorable freight rate to point of delivery made this concession necessary. At present this sale could not be duplicated for delivery in tank cars. Sales of U. S. Motor in barge lots were reported at 6.25 to 6.50 cents with one seller reporting a disposition to quote 6.125 cents.

Sales of California gasoline in New York harbor have been practically nil due to extremely low prices for U. S. Motor gasoline in the same market. However, a large volume of the west coast material was available in Baltimore and Philadelphia, and at prices designed to compete with regular U. S. Motor gasoline prices.

In Baltimore where the price for California gasoline has been 8 cents for some time, a downward cut was made by the majority of sellers when they offered this material freely at 7.50 cents. In the Philadelphia district, California gasoline was offered at 0.125-cent under the last reported price of 7.75 cents.

Rumors of shading U. S. Motor prices in the Baltimore district which haunted that market the past two weeks were totally lacking this week. The spectre of lower prices, however, cropped up in Philadelphia where it was reported that a major refiner had offered U. S. Motor at 6.50 cents. Although no sales were reported which could substantiate this low figure, the selling price for U. S. Motor ranged from 6.625 to 7.50 cents.

Lower prices for U. S. Motor gasoline also prevailed in the New England districts when a large seller entered the market offering this grade in Boston at 7.75 cents, delivered. Sporadic sales at 7.50 cents were also reported but as yet these sales had not assumed a proportion sufficient to disturb the general market. Prices in the Portland district remained generally unchanged.

A tendency on the part of one company to absorb some of the freight was responsible for the delivered price in Providence receding to 7.875 cents.

Kerosine prices were generally unchanged in all districts in spite of a lively demand reported throughout the week.

Fuel oil buying received considerable attention in the New England district where these oils were reported to be moving in good volume under contract. In districts to the south, quite a contrast existed. Belated winter has appreciably slowed up the buying of this material. Prices, however, remain generally unchanged.

Gas oil, 28-34 gravity, was freely available at 4.50 cents at New York harbor.

Gulf Coast Markets

Competition Sends Bulk Prices Down

Staff Special
NEW YORK, Nov. 15

BULK markets at the Gulf were extremely unsettled the past week. Trading was back on a competitive basis—exporters shifting for themselves for the first time in nearly two years. Lack of actual sales by American companies made the true status of the market more or less a matter of conjecture. Prices quoted by exporters were largely nominal.

An inquiry from a French buyer for approximately 60,000 barrels of 64-66, 375 end point gasoline which came into the market early in the week was expected to dispel the uncertainty regarding prices. The business was closed, however, by a London broker at a reported price of 6.50 cents, f.o.b. the U. S. Gulf. Although this information was obtained on good authority, actual confirmation of the deal was lacking.

Coincident with making quotations ranging from 6.625 to 7 cents for the business referred to above, American exporters set up new price schedules covering other commodities as follows: U. S. Motor gasoline, 5.75 to 6 cents; 60-62, 400 end point gasoline, 6.25 cents; 61-63, 390 end point gasoline, 6.50 cents; water white kerosine, 5.50 cents; prime white kerosine, 4.50 cents.

Four inquiries for part cargoes of gasoline of approximately 24,000 barrels each also were entered by French buyers late in the week. Two of the inquiries specified U. S. Motor and two of them, 64-66, 375 end point gasoline, all for January loading. There was a disposition noted on the part of some sellers to shade the prices mentioned in the previous paragraph. None of the business, however, had been placed up to the close of business Saturday.

Prices for heavy oils remained generally unchanged with bunker C still quoted by the majority of sellers at $0.65 to $0.75 per barrel. The report current a week ago of a cargo of this oil having sold at $0.62 a barrel still lacked confirmation.

Venezuela Crude

The market for Venezuela crude remained unchanged. Sellers' ideas of prices generally ranged from $0.70 to $0.75 per barrel, f.o.b. deepwater in the Lake Maracaibo region. No inquiries were reported for this oil.

Panuco Crude

Mexican heavy oils also were quiet but in some quarters it was indicated that prices had advanced slightly. Several traders doubted if a cargo of Panuco crude could be bought for less than $0.57 a barrel. This compares with a last paid price of $0.51.

Wax Markets

Foreign Buyers Active

NEW YORK, Nov. 15.—Six inquiries for wax from England and the Continent came into the market the past week and were responsible for considerable optimism on the part of several sellers. The inquiries were for approximately 200 tons each and the appearance of this potential business was interpreted as an indication of an improvement in the market. Worthy of note was the fact that this is the first bit of encouragement which has appeared in wax circles since early in the summer.

Some buyers were anxious to buy futures based on the present market price. Sellers, however, were not disposed to commit themselves on present prices.

Slight price concessions were made in the New Orleans market a short time ago for the 123-125 and 125-127 A.m.p. fully refined grades and foreign buyers were reported to have quickly snapped up all the material available at the shaded prices. Likewise, in the New York market, 124-126 scale wax was offered early last week at 2.125 cents, this week it was reported that the only wax of that grade which could be obtained was offered at a figure not lower than 2.25 cents per pound.

The 128-130 A.m.p. was an 0.125-cent lower at New Orleans, and 135-137 A.m.p. was off a similar fraction at 4.50 cents in the New York market. Prices for other grades remained generally unchanged.

Phillips Buys New Type Plane

BARTLESVILLE, Okla.—The first high-speed trimotor club airplane made by the Ford Motor Co. was sold to the Phillips Petroleum Co. Not only will it be used by executives for inspection trips, but drilling crews and trouble shooters will use it when necessity demands.

Frank Phillips, president, planned to start the first of these inspection trips shortly after delivery of the plane. He was to visit most of the company's fields and refineries. L. E. Phillips, chairman of the executive committee, member of the board of the Kansas City Federal Reserve Bank, will use the plane also for flying between Bartlesville and Kansas City.

The plane is equipped with radio, writing cabinet, kitchenette, folding berth, divan and seven reclining chairs. It is powered with three Wasp motors and has a top speed of 152 miles per hour.

OWOSSO

TRUCK AND TRAILER TANKS

"as good as the other jobs you made for us—"

Careful—close supervision of details in manufacturing—turning out Truck and Trailer Tanks that give the utmost in service—brings to us repeat business with comments from buyers such as—"We are well pleased—make these as good as the other jobs you made for us." Owosso has a reputation founded on the basis of service rendered.

May we furnish complete information and quote prices?

OWOSSO BOILER & WELDING WORKS
Owosso, Michigan

VAPOR PHASE REFINING
WILL
Increase your gasoline yields,
Improve your gasoline quality,
and
Reduce your refining costs.

THE GRAY PROCESSES CORPORATION
961-975 Frelinghuysen Avenue
NEWARK, NEW JERSEY

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
Wax Testing Presses — *Paraffine Wax Sweater Plants*
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers, and other Oil Refinery Equipment
Oil Burning Systems

BETHLEHEM STEEL COMPANY, *General Offices: Bethlehem, Pa.*
District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis
Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices Nov. 17	Prices Nov. 10	Prices Nov. 3
U. S. MOTOR GASOLINE			
New York harbor	6.75 – 7.25	6.75 – 7.25	6.75 – 7.50
Portland district	*8.25 – 8.50	*8.25 – 8.75	*8.75 – 9.50
Boston district	*7.75 – 8.00	*8.00 – 8.25	*8.00 – 8.50
Providence district	*7.875– 8.25	*8.00 – 8.25	*8.00 – 8.50
Philadelphia district	6.75 – 7.25	7.00 – 7.50	7.00 – 7.50
Baltimore district	7.00 – 7.50	7.00 – 7.50	7.00 – 7.50
Norfolk district	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
Charleston district	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
Savannah district	7.00 – 7.50	7.00 – 7.50	7.50 – 7.75
Jacksonville district	7.00 – 7.50	7.00 – 7.50	7.50 – 7.75
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	†8.00	†8.00	7.75 – 8.00
Philadelphia district	7.625– 7.75	7.75	7.75
Baltimore district	7.50	7.75 – 8.00	8.00
‡DOMESTIC AVIATION GASOLINE			
New York harbor	10.00 –12.00	10.50 –12.00	10.50 –12.00
Philadelphia	10.00 –12.00	10.50 –12.00	10.50 –12.00
Baltimore	11.00 –13.00	11.00 –13.00	11.00 –13.00
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	6.25 – 6.75	6.25 – 6.75	6.25 – 6.75
Philadelphia district	6.25	6.25	6.25
Baltimore district	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
GAS OIL: 28-34 Gravity			
New York harbor	4.50 – 4.75	4.50 – 4.75	4.50 – 5.00
Boston district	4.50 – 4.75	4.50 – 4.75	4.50 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
Boston district	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.00 –$1.05	$1.00 –$1.05	$1.00 –$1.05
DIESEL OIL			
New York harbor	$2.00 –$2.10	$2.00 –$2.10	$2.00 –$2.10

†Nominal. *Delivered prices.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	Nov. 17	Nov. 10	Nov. 3
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	27.50 –29.50	28.00 –30.00	28.00 –30.00
Bright stock, No. 6½ color diluted	26.00 –28.00	26.00 –28.00	.....
600 D filtered	24.00 –28.00	24.00 –28.00	24.00 –28.00
600 Warren E. filtered	22.00 –25.00	22.00 –25.00	22.00 –25.00
600 stm. refd. unfiltered	17.00 –18.00	17.00 –18.00	17.00 –18.00
650 stm. refd. unfiltered	20.00 –22.00	20.75 –22.00	20.75 –22.00
600 flash, steam refined	23.00 –25.00	23.00 –25.00	23.00 –25.00
630 flash, steam refined	31.00 –33.00	31.00 –33.00	31.00 –33.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	17.00 –19.00	17.00 –19.00	17.00 –19.00
250 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
200 vis. No. 6 color	16.25 –17.00	16.25 –17.00	16.25 –17.00
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¾ color	21.50	21.50	21.50
180 vis. No. 3¼ color	17.00 –18.00	17.00 –18.00	17.00 –18.00
100 vis. No. 2¼ color	12.50 –15.00	12.50 –15.00	12.50 –15.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	27.50 –30.00	27.50 –30.00	27.50 –30.00
400 vis. No. 7¼ color	26.00 –29.00	26.00 –29.00	26.00 –29.00
300 vis. No. 6 color	22.00 –26.00	22.00 –26.00	22.00 –26.00
200 vis. No. 6 color	21.00 –23.50	21.00 –23.50	21.00 –23.50

Wax Market

(Prices in cents per pound, A.S.T.M. tests except melting points which are American. F.a.s. carload lots)

NEW YORK	Nov. 17	Nov. 10	Nov. 3
124-126 Yellow crude scale	2.25 – 2.375	2.125– 2.25	2.125– 2.25
122-124 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.125– 3.25	3.125	3.125
125-127 Fully refined	3.125– 3.25	3.125– 3.25	3.125– 3.25
128-130 Fully refined	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
130-132 Fully refined	3.625– 3.875	3.625– 3.875	3.625– 3.875
133-135 Fully refined	4.25 – 4.375	4.25 – 4.375	4.25 – 4.50
135-137 Fully refined	4.50 – 4.625	4.625	4.625
NEW ORLEANS			
124-126 Yellow crude scale	2.125– 2.25	2.125– 2.25	2.125– 2.25
122-124 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
125-127 Fully refined	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
128-130 Fully refined	3.25 – 3.375	3.375– 3.50	3.50
130-132 Fully refined	3.625– 3.75	3.625– 3.75	3.625– 3.75
133-135 Fully refined	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375

Gulf Coast Bulk Market

Prices are f. o. b. Gulf oil terminals covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment, unless otherwise noted).

GASOLINE	Prices Nov. 17	Prices Nov. 10	Prices Nov. 3
U. S. Motor	5.75 – 6.00	6.50	7.00
60-62, 400 e.p.	6.25	7.00	7.50
61-63, 390 e.p.	6.50	7.25	7.75
64-66, 375 e.p.	6.625– 6.875	7.50	8.00
U. S. Motor, cases (cargoes)	$1.60	$1.75	$1.75
64-66, cases (cargoes)	$1.70	$1.85	$1.85
KEROSINE			
44 water white	5.50	5.75	6.00
41-43 prime white	4.50	4.75	5.00
Water white, cases (cargoes)	$1.40	$1.45	$1.45
Prime white, cases (cargoes)	$1.30	$1.35	$1.35
GAS & BUNKER OILS			
*26-30 translucent gas oil	3.50	3.50 – 3.75	3.50 – 3.75
*30 plus translucent gas oil	3.50	3.75	3.75
Grade C bunker oil, for ships' bunkers, per bbl.	$0.90 –$1.00	$0.90 –$1.00	$1.00
Grade C bunker oil, per bbl. in cargoes	$0.65 –$0.75	$0.65 –$0.75	$0.65 –$0.75
Grade C bunker oil, per bbl., cargoes, for shipment to Gulf ports	$0.85	$0.85	$0.85 –$0.90

*Less than ½ of 1% sulphur.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl.	$0.55 –$0.60	$ 0.55 –$0.60	$0.55 –$0.60
Grade C bunker oil for bunkering, taxes paid, per bbl.	$1.00	$1.00	$1.00

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	5.50 – 5.75	. 50 – 5.75	5.50 – 5.75
200 vis. No. 3 unfiltered pale	7.625– 8.25	7.625– 8.25	7.625– 8.25
300 vis. No. 3 unfiltered pale	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
500 vis. No. 3½ unfiltered pale	9.50 –10.50	9.50 –10.50	10.00 –10.50
750 vis. No. 4 unfiltered pale	12.00 –12.75	12.00 –12.75	12.00 –12.75
1200 vis. No. 4 unfiltered pale	14.00 –16.00	14.00 –16.00	14.00 –16.00
200 vis. No. 5-6 red oil	6.75 – 7.50	6.75 – 7.50	7.00 – 7.50
300 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	9.00 – 9.375	9.00 – 9.375	9.00 – 9.375
750 vis. No. 5-6 red oil	10.50 –11.50	10.50 –11.50	10.50 –11.50
1200 vis. No. 5-6 red oil	13.50 –15.00	13.50 –15.00	13.50 –15.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Nov. 17	Nov. 10	Nov. 3
Gasoline, U. S. Motor, 53-55 Gravity	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
Gasoline, U. S. Motor-blends and special cuts	7.00 – 8.25	7.00 – 8.25	7.00 – 8.25
Gasoline, 400 e.p. blend.	8.25 – 9.25	8.25 – 9.25	8.25 – 9.25
Gas Oil, 30-34 per bbl.	$0.87 –$1.05	$0.87 –$1.05	$0.87 –$1.05
Diesel Oil, 27 plus, per bbl.	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05
Bunker oil, 14-18 per bbl.	$0.64 –$0.85	$0.64 –$0.85	$0.64 –$0.85
Fuel oil, 14-18 per bbl.	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosine, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Gasoline, 400 e.p. blend	$1.85 –$2.00	$1.85 –$2.00	$1.85 –$2.00
Kerosine, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Nov. 17 Crude &/or Fuel	Nov. 17 Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	21	18
Gulf to U. K. or Continental ports*	11	†10
North Atlantic to U. K. or Continental ports*	9/6	†8/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.50	$0.45–$0.50
Gulf to North Atlantic ports (not E. of N. Y.)**	14–16	16–18

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Two ports discharged.

AMERICAN PETROLEUM REFINING

by

H. S. Bell

HAVE you seen the new edition of AMERICAN PETROLEUM REFINING just out? Every detail of refinery practice is brought down-to-date in this one volume.

Among the outstanding recent developments, Mr. Bell goes thoroughly into vapor phase cracking, production of high compression gasoline, the development of modern pipe stills, use of Diesel engines in oil pumping, chemical cracking with aluminum chloride, new methods of treating lubricating oils and light oils, removing of amorphous waxes to allow manufacture of low cold test lubricants, distillation, fractionation, methods of testing, plant design, storage of oil, volume measurements, etc.

In AMERICAN PETROLEUM REFINING you have a complete analysis of refinery operation, engineering, plant management and equipment design of the modern oil refinery.

If you are a refinery superintendent, engineer, chemist, construction foreman or ambitious refinery employee—you will find this new volume by H. S. Bell, consulting engineer, of inestimable value in your work.

Get your copy of AMERICAN PETROLEUM REFINING today!

550 pages Illustrated $6 postpaid

NATIONAL PETROLEUM NEWS
Penton Bldg., Cleveland, Ohio

Send me the new edition of AMERICAN PETROLEUM REFINING by H. S. Bell. Enclosed is $6.

NAME .....

Street .....

City-State.....

A Little Dirt Could Cause *a Lot of Damage*

. . . a Sweetland will keep out the dirt.

IN spite of all precautions, a bit of dirt could —and sometimes does—get into the lube oils just prior to shipment.

The best thing to do is to re-filter the oils at the loading point. Use a special Sweetland Filter. It's being done—with profit.

OLIVER UNITED FILTERS INC.

SAN FRANCISCO, Fed. Reserve Bank Bldg. NEW YORK, 33 West 42nd St.
CHICAGO, 565 Washington Blvd. LONDON, W. C. 1, 150 Southampton Row
PARIS, T. L. Genter, Concessionaire, 63 Ave. des Champs Elysees

SKILLED SUPERVISION

Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE—LUBRICATING OILS
NAPHTHA—GAS—OILS
WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices:
PITTSBURGH, PA.

District Sales Offices: New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect Nov. 17, 1930, as Posted by Principal Marketing Companies

Latest Changes in Tank Wagon Prices

Gasoline

S. O. New Jersey—S. s. only cut 1c, Roanoke, to 18c, same as t. w., **Nov. 12.**

S. O. Kentucky—T. w. and s. s. cut 1c, Gulfport, both to 18c, **Nov. 8.**

T. w. and s. s. cut 2c, Savannah, to 18c and 20c, **Nov. 3.**

S. O. California—Retail price of gasoline cut 2.5c, Portland, 1.5c Seattle, 3.5c Spokane, and 3c Tacoma, **Nov. 13.**

Aviation gasoline cut 3c, Los Angeles, San Francisco and Reno; cut 2c, Portland, Seattle and Spokane, and up 0.5c, Phoenix, **Nov. 5.**

S. O. Nebraska—T. w. up 1.75c, s. s., 3.75c, Scottsbluff, to 18.75c and 20.75c, **Nov. 14.**

S. O. Indiana—Corrections: Since the 2c general cut on gasoline on Sept. 29, prices at several points have been incorrect in the tank wagon table, due to inability to get accurate check previously for all points. On Sept. 29 these points were unchanged: Detroit, Evansville, Grand Rapids, Kansas City, Minneapolis and Saginaw. Irregular changes were made at these points:

Decatur t. w. cut 1.8c, s. s. cut 2.2c; Des Moines s. s. only unchanged; E. St. Louis, t. w. and s. s. cut 1.7c; Huron t. w. cut 2.8c, s. s. unchanged; Indianapolis t. w. only cut 2.3c, s. s. unchanged; Mankato t. w. cut 5.1c s. s. cut 6.1c; Peoria t. w. cut 2c, s. s. cut 4.2c; St. Joseph s. s. only unchanged; Sioux City s. s. cut 3.2c; and Wichita s. s. only unchanged.

Since Sept. 29, these changes have been made:

Davenport, s. s. only cut 1c, to 16.5c, **Oct. 18.**

Decatur, s. s. only cut 1c, to 16c, **Oct. 22.**

Des Moines, t. w. and s. s. cut 1c, both to 15.5c, including tax, **Oct. 19.**

Detroit, s. s. only cut 1.8c, to 12.5c, **Nov. 4.**

Duluth, s. s. only cut 1c, to 17.5c, **Oct. 22.**

East St. Louis, s. s. only cut 2c, to 14.7c, **Oct. 30.**

Evansville, including changes previous to Sept. 29 not previously reported in NATIONAL PETROLEUM NEWS: S. s. only cut 4c, **Sept. 9**; s. s. only cut 1c, **Sept. 11**; t. w. only cut 4c, **Sept. 12**; t. w. only cut 1c, **Sept. 15**; no change Sept. 29; t. w. and s. s. adv. 3.1c, to 17.1c and 18.1c respectively, including 4c tax, **Oct. 6.**

Kansas City, s. s. only cut 1c, to 14.9c, **Oct. 21.**

Madison, s. s. only cut 1c, to 15.3c, **Oct. 23.**

Peoria, s. s. only cut 1c, to 14c, **Oct. 17**; t. w. only cut 1.2c, to 15c, including 3c tax, **Nov. 4.**

Saginaw, including changes previous to Sept. 29 not heretofore reported: S. s. only cut 3c, to 16.9c, **Sept. 14**; t. w. only cut 2c, to 16.9c, **Sept. 20**; s. s. only cut 2.6c, to 14.3c, **Sept. 22.** No change Sept. 29.

Wichita, s. s. only cut 1c, to 13.8c, **Oct. 18.**

All above changes are reflected in this issue.

Kerosine

S. O. Indiana—Irregular changes on kerosine in the general 2c cut on Sept. 29 were made at: Decatur, Evansville, Indianapolis, Peoria, Quincy and St. Joseph, cut 2.1c; South Bend, cut 2.2c; and Joliet, cut 2.3c.

All prices are corrected in this issue.

S.O. NEW JERSEY TERRITORY

	Gasoline Total				Oil
	T.W	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	12.5	2	14.5	15.5	11.5
Newark, N. J.	11.5	2	13.5	14.5	10.5
Annapolis	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	9.5
Cumberland, Md.	13	4	17	18	12
Washington, D. C.	11.7	2	13.7	14.7	10.7
Danville, Va.	12.8	5	17.8	18.8	11.8
Norfolk, Va.	11.3	5	16.3	17.3	10
Richmond, Va.	11.7	5	16.7	17.7	10.7
Roanoke, Va.	13	5	18	18	12
Petersburg, Va.	12.3	5	17.3	18.3	11.3
Charleston, W. Va.	12.5	4	16.5	17.5	11.5
Keyser, W. Va.	13.1	4	17.1	18.1	12.1
Parkersburg, W. Va.	11.2	4	15.2	16.2	10.2
Wheeling, W. Va.	12.4	4	16.4	17.4	11.4
Raleigh, N. C.	13.2	5	18.2	19.2	12.2
Charlotte, N. C.	13.3	5	18.3	19.3	12.3
Hickory, N. C.	13.6	5	18.6	19.6	12.6
Mt. Airy, N. C.	13.5	5	18.5	19.5	12.5
Salisbury, N. C.	13.5	5	18.5	19.5	12.5
Charleston, S. C.	11.3	6	17.3	18.3	10.3
Columbia, S. C.	13.2	6	19.2	20.2	12.2

Note: 2c per gallon discount off retail t.w. price of gasoline to dealers only thru S. O. New Jersey territory, except Washington, D. C. where discount is 3c.

CONTINENTAL OIL

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Denver, Colo.	12	4	16	19	13.5
Pueblo, Colo.	13	4	17	20	13.5
Grand Junc., Colo.	14	4	18	21	17
Casper, Wyo.	13	4	17	20	12
Cheyenne, Wyo.	14	4	18	21	13.5
Butte, Mont.	14	5	19	22	18
Helena, Mont.	17.5	5	22.5	25.5	18
Salt Lake City, Utah.	16.5	3½	20	23	17
Boise, Ida.	18.5	5	23.5	....	19
Twin Falls, Ida.	18.5	5	23.5	....	19
Albuquerque, N. M.	11	5	16	18	15

S. O. CALIFORNIA

	Gasoline		Oil
	Tax	Posted Retail Price	Posted Wholesale	T.W.
Phoenix, Ariz.	4	22.5	19.5	20
Los Angeles, Cal.	3	20.5	22.5	15.5
Fresno, Cal.	3	21	23	17
San Francisco, Cal.	3	21	23	15.5
Reno, Nev.	4	26	28	19
Portland, Ore.	4	20.5	24.5	16.5
Seattle, Wash.	3	20	23.5	16.5
Spokane, Wash.	3	22	27.5	20.5
Tacoma, Wash.	3	18.5	23.5	16.5

Note: 6c per gal. discount to dealers off posted wholesale price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only. This discount determines net t.w. price.

S. O. LOUISIANA

	Gasoline				Oil
	Posted Retail	Total Posted			Posted Retail
	T.W.	Tax	T.W.	S.S.	T.W.
Little Rock, Ark.	10	5	15	16	12
Alexandria, La.	10.5	*5	15.5	16.5	†13
Baton Rouge, La.	10.5	4	14.5	15.5	†13
New Orleans, La.	8.5	*5	13.5	14.5	†12
Lake Charles, La.	10.5	*5	15.5	16.5	†13
Shreveport, La.	10.5	4	14.5	15.5	†13
Lafayette, La.	10.5	*5	15.5	16.5	†13
Bristol, Tenn.	14	5	19	20	14
Chattanooga, Tenn.	12.5	5	17.5	18.5	13
Knoxville, Tenn.	13	5	18	19	15
Nashville, Tenn.	12	5	17	18	15
Memphis, Tenn.	11	5	16	17	12.5

Note: Discounts in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail t.w. price; to consumers at service stations when cash is paid for purchases at time of delivery, 1c per gal. off posted retail s.s. price.

***Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 4c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.**

†Kerosine price in Louisiana includes 1c state tax.

S. O. KENTUCKY

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Ashland, Ky.	13	5	18	20	15
Catlettsburg, Ky.	13	5	18	20	15
Lexington, Ky.	12	5	17	18	14.5
Louisville, Ky.	11	5	16	18	12
Covington, Ky.	13	5	18	20	14.5
Clarksdale, Miss.	13	5	18	20	12.5
Gulfport, Miss.††	13	5	18	18	13
Jackson, Miss.	10	5	15	17	13
Natchez, Miss.	13	5	18	20	13
Vicksburg, Miss.	13	5	18	20	13
Birmingham, Ala.‡‡	14	4	18	20	14.5

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 3/50c on both.

Kerosine inspection fees only, per gallon; Iowa 7/100c; Michigan 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect Nov. 17, 1930, as Posted by Principal Marketing Companies

	T.W.	Tax	T.W.	S.S.	T.W.
Mobile, Ala.‡	13	4	17	19	11.5
Montgomery, Ala.*	14	4	18	20	15
Atlanta, Ga.	14	6	20	22	†13.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	14	6	20	22	†13
Savannah, Ga.	12	6	18	20	†14
Jacksonville, Fla.	11	6	17	19	14
Miami, Fla.	13	6	19	21	14
Tampa, Fla.	12	6	18	20	13
Pensacola, Fla.**	14	6	20	21	13.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.

†Georgia kerosine prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

S. O. NEBRASKA

Omaha, Neb.	13.25	4	17.25	18.25	11.25
McCook	14.75	4	18.75	20.75	12.75
Norfolk	13.25	4	17.25	17.25	11.75
North Platte	14.75	4	18.75	20.75	12.50
Scottsbluff	14.75	4	18.75	20.75	12.25

Note: Discounts: 1c per gal. off tank wagon price of gasoline for 1,000 gallon dumps per month to consumers taking tank wagon delivery only.

S. O. INDIANA

Chicago, Ill.	13	3	16	17	11
Decatur, Ill.	13.4	3	16.4	16	11
E. St. Louis, Ill.	12.7	3	15.7	14.7	10.2
Joliet, Ill.	13.4	3	16.4	17.4	11
Peoria, Ill.	12	3	15	14	11
Quincy, Ill.	13.2	3	16.2	17.2	10.8
Indianapolis, Ind.	12.9	4	16.9	17.9	12.1
Evansville, Ind.	13.1	4	17.1	18.1	11.9
South Bend, Ind.	13.4	4	17.4	18.4	12.2
Detroit, Mich.	13.8	3	16.8	12.5	12.7
Grand Rapids, Mich.	12.7	3	15.7	16.7	12.6
Saginaw, Mich.	13.9	3	16.9	14.3	12.8
Green Bay, Wisc.	13.6	2	15.6	16.6	11.4
Madison, Wisc.	13.3	2	15.3	15.3	11.1
Milwaukee, Wisc.	13.1	2	15.1	15	10.9
La Crosse, Wisc.	14.2	2	16.2	17.2	12
Minneapolis, Minn.	14	3	17	17	11.9
Duluth, Minn.	14.5	3	17.5	17.5	11.9
Mankato, Minn.	11	3	14	14	11.7
Des Moines, Ia.	12.5	3	15.5	15.5	11.3
Davenport, Ia.	13.5	3	16.5	16.5	11.3
Sioux City, Ia.	13.1	3	16.1	15.9	10.9
Mason City, Ia.	13.5	3	16.5	17.5	11.3
St. Louis, Mo.	*10.9	2	12.9	13.9	10.3
Kansas City, Mo.	†12.9	2	14.9	14.9	9.6
St. Joseph, Mo.	†13.5	2	15.5	11.9	10.1
Fargo, N. D.	15.9	3	18.9	19.9	13.9
Grand Forks, N. D.	16.2	3	19.2	20.2	14.2
Minot, N. D.	15.9	3	18.9	19.9	13.9
Pierre, S. D.	14	4	18	19	12.4
Huron, S. D.	13.5	4	17.5	17.5	12.7
Wichita, Kans.	11.8	3	14.8	13.8	9.8
Bartlesville, Okla.	11.5	4	15.5	18.5	9.5

S. O. Indiana's quantity contract price schedule thru territory (except in Chicago, which see below) on tank truck deliveries of gasoline, figured from the service station price is 3c for 500 gal. or more a month; and 4½c for 75,000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 4c per gal. off service station price; over 1,000 gals. per month, 5c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Ohio statewide	14	4	18	19	15
Preble County	14	4	18	18	15
Butler County	11	4	15	15	15

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices. In counties where prices are below statewide schedule, discount is 3c per gal. off t.w. price.

Discount on kerosine to dealers and commercial consumers is 3c per gal. off t.w. price thru Ohio.

MAGNOLIA PETROLEUM

			Gasoline Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Muskogee, Okla.	11	4	15	18	9
Oklahoma City	9	4	13	16	10
Tulsa, Okla.	10	4	14	18	10
Fort Smith, Ark.†	10.5	4	14.5	15.5	12
Little Rock, Ark.	8	5	13	14	12

	T.W.	Tax	T.W.	S.S.	T.W.
Texarkana, Ark.*	13	4	17	17	12
Dallas, Tex.	10	4	14	17	11
Fort Worth, Tex.	10	4	14	17	10
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	9	4	13	17	11
El Paso, Tex.	12	4	16	20	13

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	12.3	2	14.3	16.3	10
Borough of Richmond	13.7	2	15.7	17.7	11.7
Albany, N. Y.	13.6	2	15.6	17.6	12.6
Buffalo, N. Y.	12.8	2	14.8	16.8	9
Rochester, N. Y.	13	2	15	17	9
Syracuse, N. Y.	15.8	2	17.8	19.8	12.8
Boston, Mass.	12.5	2	14.5	16.5	10
Augusta, Me.	15.8	4	19.8	21.8	12.8
Manchester, N. H.	15.4	4	19.4	21.4	10
Burlington, Vt.	16.3	4	20.3	22.3	13.3
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Providence, R. I.	10.7	2	12.7	14.7	10

Note: S. O. New York allows 3c off t.w. price to dealers in New York City, and 2c off t.w. price thru rest of territory.

ATLANTIC REFINING

Pittsburgh, Pa.	14	*	14	19	12
Philadelphia, Pa.	14	*	14	19	12
Allentown, Pa.	14	*	14	19	12
Erie, Pa.	14	*	14	18	11
Scranton, Pa.	14	*	14	19	12
Altoona, Pa.	14	*	14	19	12
Dover, Del.	14	3	17	19	12
Wilmington, Del.	14	3	17	19	12
Boston, Mass.	12.5	2	14.5	16.5	10
Springfield, Mass.	15.5	2	17.5	19.5	10
Worcester, Mass.	15.3	2	17.3	19.3	10
Fall River, Mass.	12.1	2	14.1	15.1	10
Providence, R. I.	10.7	2	12.7	14.7	10
Hartford, Conn.	15.5	2	17.5	19.5	10
New Haven, Conn.	15.6	2	17.6	19.6	10
Atlantic City, N. J.	12.5	2	14.5	15.5	11.5
Camden, N. J.	11.6	2	13.6	14.6	10.6
Trenton, N. J.	12	2	14	15	11
Annapolis, Md.	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	10.2
Hagerstown, Md.	12.7	4	16.7	17.7	11.7
Richmond, Va.	11.7	5	16.7	17.7	10.7
Wilmington, N. C.	11.4	5	16.4	17.4	12.4
Brunswick, Ga.	14	6	20	22	**15
Jacksonville, Fla.	13	6	19	19	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics. Erie has dealer discount of 4c off t.w. price, effective May 28.

*3-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosine prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Sprits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**20.7	**22.2	**24
St. Louis	13.9	17.1	18.9
New York		10	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)

New York harbor	10.00
Philadelphia district	10.00
Providence	10.50

Tank Wagon or Steel Barrels

New York City	15–16
Syracuse	17–18
Rochester	18
Buffalo	16–18
Providence	17–18
Boston	18–19
Bridgeport	16–18
Newark	14–16
Philadelphia	16–17
Baltimore	16–18

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

			Gasoline Total		Oil
ONTARIO	T.W.	Tax	T.W.	S.S.	T.W.
Toronto	18.5	5	23.5	27	19.5
Ottawa	18.5	5	23.5	27	19.5
North Bay	21.5	5	26.5	32	26
Ft. William	21.5	5	26.5	30	21.5
Border Cities, including Windsor	17.5	5	22.5	26	18.5
MANITOBA					
Winnipeg	20	5	25	29	20.5
SASKATCHEWAN					
Regina	25	5	30	34	25
ALBERTA					
Edmonton	26.5	5	31.5	35	26.5
Calgary	22.5	5	27.5	31	22.5
BRITISH COLUMBIA					
Vancouver	23	5	28	32	24
QUEBEC					
Montreal	19.5	5	24.5	28	20.5
Quebec City	20.5	5	25.5	29	21.5
Three Rivers	20.5	5	25.5	29	21.5
NEW BRUNSWICK					
St. John	19	5	24	28	21
Moncton	19	5	24	28	21
NOVA SCOTIA					
Halifax	19	5	24	28	21
PRINCE EDWARD ISLAND					
Charlottetown	19	5	24	28	21

Note: In districts surrounding these points 1c additional is added to city price.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect Nov. 17, 1930

	T.W.	Tax	T.W.
Newark, N. J.	17.4	*	17.4
Baltimore, Md.	16.2	4	20.2
Washington, D. C.†	18.0	2	20.0

*New Jersey road tax of 2c does not apply on

(*Continued on page 101*)

PIPE BENDS
WELDED HEADERS
CAST STEEL FITTINGS
COMPLETE PIPING

LIMBERT PIPING

We manufacture ordinary requirements or design and manufacture special piping for any refinery condition. A third of a century of piping leadership.

GEO. B. LIMBERT CO.
570 Fulton Street, Chicago, Ill.
St. Louis Kansas City, Mo.
Detroit, Mich.

Reinforced Folio

Your Name in Gold FREE

Complete Only **$13.35**

362—A very compact folio, having three pockets. Made from the best grade smooth black cowhide. Stiffened bottom reinforced with metal studs. Case contains six 4-oz. bottles and five grease jars. Two inner cases may be carried.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

HEAT EXCHANGERS

KELLOGG

The M. W. Kellogg Co., 225 Broadway, New York; Tulsa, Okla., Philtower Bldg.; Los Angeles, Cal., 1031 So. Broadway

Oil Merchandising

An average of 14 articles per month have been published in National Petroleum News the past six months on oil merchandising problems.

Here are 83 of the more important ones that have appeared since May telling how oil companies sell their goods:

1930

Ten principles for bigger profits Nov. 5, p. 61

Points to consider in selling cigarettes Nov. 5, p. 29

Sales built by courtesy—not courtesy cards, service—not credit Nov. 5, p. 71

Merchandising and jobbing ideas marketers are using, Oct. 29, p. 78; Aug. 20, p.75; Aug. 13, p. 123; July 30, p. 130; July 16, p. 85; May 28, p. 109; May 21, p. 100

A woman's ideas on women's trade Oct. 29, p. 85

$1 gal. for motor oil; pension goes with it Oct. 29, p. 91

5% cut in prices requires 25% gain in business Oct. 29, p. 95

Rolling kitchens promote sale of liquefied gas Oct. 29, p. 122

Lease-agency abuses bring suspicion against code Oct. 22, p. 23

Why one jobber finds agency outlets better than own stations Oct. 22, p. 61

Talking gasoline pump advertises new gasoline Oct. 22, p. 106

Merchandising hints for winter; tell customers why Oct. 15, p. 38

Refiner extends 11 month credit to farmers Oct. 8, p. 27

$10,000,000 market awaits oil marketers Oct. 8, p. 29

How one Independent built business while others sell out Oct. 8, p. 77

How credit should be handled Oct. 8, p. 91

Tire company gives gasoline to draw customers Oct. 1, p. 23

Merchandising nationally advertised brands vs. handling only one Oct. 1, p. 79

Side lines at stations help gasoline sales Oct. 1, p. 83

Selling tires at oil stations—editorial Sept. 24, p. 53

"Certified lubrication" backed by training in school, advertising, merchandising Sept. 24, p. 161

Self-serve joins religion with low prices to get business Sept. 24, p. 181

Every motorist need satisfied is trend in merchandising; how one company does it Sept. 24, p. 186

Automatic pump serves gallon cans of gas Sept. 24, p. 196

"Gas" on consignment eliminates dry roadside stations Sept. 24, p. 234

Standard Oil to sell Atlas tires Sept. 17, p. 27

One-stop servicing is function for oil industry Sept. 17, p. 67

Floating station serves hydroplanes, yachts Sept. 10, p. 26; Sept. 3, p. 94

Tire sales please motorists at S. O. N. J. stations Sept. 10, p. 27

Three managers used for nine bulk plants Sept. 10, p. 59

Uses metal tags for charge customers Sept. 10, p. 63

Tennessee marketers told to diversify lines Sept. 3, p. 97

Sells oil, grease, by taking plant to prospects Sept. 3, p. 100

Advertised oil increases tourist trade Sept. 3, p. 130

Discount abuses threaten code in Tennessee Aug. 27, p. 27

Results of coupon racket in Cincinnati Aug. 27, p. 33

Free gasoline, oil, prizes banned for air stunts Aug. 20, p. 27

The oil jobber—trends and conditions, Aug. 20, p. 37; Aug. 13, p. 91; Aug. 6, p. 27; July 30, p. 31; and July 23, p. 33.

Latest and biggest is Merry-Go-Round one-stop Aug. 20, p. 77

Quack schemes for sales Aug. 13, p. 29

Canvas canopy saves $2000 in station cost Aug. 13, p. 37

More oil companies selling tires Aug. 13, p. 83

Customer-shareholding station opens in Tulsa Aug. 13, p. 38

Stations lose on coupon racket Aug. 6, p. 23

Uses talkies in sales education Aug. 6, p. 26

How one station keeps eight men busy Aug. 6, p. 77

Daily contact with entire sales force helps sales Aug. 6, p. 81

How attractive rest rooms brings customers July 23, p. 87

Travelaide service points out detours July 9, p. 76

Advertised brands sold easiest at one-stops July 9, p. 81

Co-op cut-rate station fails July 2, p. 38

"Selling" second oil fill while making first helps sales July 2, p. 93

How to sell told at attendants' meetings July 2, p. 101

Uses talkies for sales meeting June 25, p. 40

Indian Village station sells Indian curios June 25, p. 89

Uses 250,000 picture cards to advertise points to visit June 25, p. 97

Nets 10% on tire sales without stock June 25, p. 99

Each company truck hauls tankcar of gasoline a day June 25, p. 105

How jobber directs 14 bulk plants from sun parlor June 18, p. 85

Jobber attracts tourists by station appearance June 11, p. 88

Oil company finance plan boosts sales 275% June 4, p. 31

Lubrication school trains men to sell June 4, p. 95

Tire company's two one-stops sell 600,000 gallons a year June 4, p. 107

New markets for liquid petroleum gas May 28, p. 27

One-stop manager needs sales ability, technical knowledge May 28, p. 34

Lube oil sales doubled by change to smaller package May 28, p. 99

Super-service means super-personnel May 21, p. 107

Abe Martin writes first advertisement for Indiana jobber May 21, p. 111

Oil company touring service averages 200 requests daily May 21, p. 115

Self-serve station operating in Indiana May 14, p. 85

Station gets business by parking cars May 14, p. 93

Seven stations feed business to one-stops May 7, p. 38

Retreading tires and special polish jobs help sales May 7, p. 90

Back copies of any of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of *National Petroleum News* complete.

National Petroleum News

Main Office: 1213 West Third St. Cleveland, Ohio

Crude Oil Prices (in Effect Nov. 17, 1930)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Alleghany district (posted by Tide Water Pipe Co., Ltd.) (Effective Nov. 12, 1930) $2.15
Penna. Grade Oil in National Transit Lines (Effective Nov. 12, 1930) *1.85
Penna. Grade Oil in Southwest Penna. Pipe Lines (Effective Nov. 12, 1930) 1.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Nov. 12, 1930) 1.70
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Nov. 12, 1930) 1.45
Wayne district crude in Cumberland lines (West Virginia) (Effective Oct. 29, 1930) 0.97
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Oct. 28, 1930) 1.25
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Oct. 29, 1930) 1.10
Somerset Oil in Eureka Pipe Lines (Effective Oct. 29, 1930) 0.94
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929) $0.60
*Oil run prior to July 1, 1929 is 5c less per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Nov. 10, 1930) $1.00

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective Oct. 28, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (Oct. 28, 1930) $1.10

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Oct. 28, 1930

Wooster	$1.35	Princeton	$1.30
Lima	1.10	Illinois	1.30
Waterloo	1.20	Plymouth	0.88
Indiana	0.87	West Kentucky	1.15

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Oct. 28, 1930

Petrolia $1.50
Oil Springs 1.57

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Nov. 1, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

Oct. 25, Stanolind Crude Oil Purchasing Co. same schedule in Oklahoma-Kansas as Prairie. On Oct. 27, The Texas Co. met Prairie prices in Oklahoma, and on Oct. 28, in North Texas and North Central Texas.

Humble Oil & Refining Co. Prices

Effective Oct. 28, 1930

In Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona fields, all in Texas, same prices as Prairie, which see above.

Magnolia Petroleum Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Oct. 28, 1930

Magnolia posts same prices in all three states as Prairie, except these lower grades:

Below 26	$0.53	27-27.9	$0.61
26-26.9	0.57	28-28.9	0.65

Effective Oct. 28, 1930

Corsicana heavy	$0.75
Luling	0.75
Mirando	0.75
Darst Creek, 60° and above	0.90

Carter Oil Co.

(Oklahoma and Kansas)

Oct. 27, 1930, same schedule as Prairie, which see above.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Oct. 28, 1930

Hutchinson and Carson Counties

Below 29	$0.45	35-35.9	$0.72
29-29.9	0.49	36-36.9	0.75
30-30.9	0.53	37-37.9	0.78
31-31.9	0.57	38-38.9	0.81
32-32.9	0.61	39-39.9	0.84
33-33.9	0.65	40 and above	0.87
34-34.9	0.69		

Gray County:

Below 29	$0.50	35-35.9	$0.77
29-29.9	0.54	36-36.9	0.80
30-30.9	0.58	37-37.9	0.83
31-31.9	0.62	38-38.9	0.86
32-32.9	0.66	39-39.9	0.89
33-33.9	0.70	40 and above	0.92
34-34.9	0.74		

Above prices met by Magnolia and The Texas Co. on Oct. 28 in Hutchinson, Carson and Gray counties.

Wheeler County: Posted by Magnolia Pet. Co. Effective Apr. 10. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective Oct. 28, 1930

Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, Tex., also Lea County, N. Mex.

Below 25	$0.50	31-31.9	$0.64
25-25.9	0.52	32-32.9	0.66
26-26.9	0.54	33-33.9	0.68
27-27.9	0.56	34-34.9	0.70
28-28.9	0.58	35-35.9	0.72
29-29.9	0.60	36 and above	0.74
30-30.9	0.62		

Winkler and Pecos counties, Tex.:

Effective Oct. 28, 1930

Below 25	$0.55	31-31.9	$0.69
25-25.9	0.57	32-32.9	0.71
26-26.9	0.59	33-33.9	0.73
27-27.9	0.61	34-34.9	0.75
28-28.9	0.63	35-35.9	0.77
29-29.9	0.65	36 and above	0.79
30-30.9	0.67		

Oct. 28, 1930, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble

Oct. 28, Magnolia same prices in Winkler, Crane, Upton, Howard, Glasscock and Mitchell counties.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Oct. 28, 1930

Mirando	$0.75
Salt Flat	0.90
Darst Creek	0.90
Pettus, Bee County	1.10

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, Sabine, Cotton Valley, Sarepta and Carterville.

Effective Oct. 30, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

Smackover, all grades	$0.70
Bellevue (Oct. 30)	1.00
*Urania, La. (Oct. 30, 1930)	0.75
†East El Dorado (Calion) (Oct. 30)	0.70

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

Oct. 28, 1930, The Texas Co. same schedule in Louisiana as Standard.

Oct. 30, Magnolia met Standard schedule in Louisiana-Arkansas fields except it posts the same low grades in La.-Ark. as in Mid-Continent.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Oct. 30, 1930

Below 29	$0.54	31-31.9	$0.66
29-29.9	0.58	32 and above	0.70
30-30.9	0.62		

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Oct. 28, 1930

Grades A	$1.00	32-32.9	$1.06
Grades B:		33-33.9	1.08
Below 25	0.75	34-34.9	1.10
25-25.9	0.92	35-35.9	1.12
26-26.9	0.94	36-36.9	1.14
27-27.9	0.96	37-37.9	1.16
28-28.9	0.98	38-38.9	1.18
29-29.9	1.00	39-39.9	1.20
30-30.9	1.02	40 and above	1.22
31-31.9	1.04		

On Oct. 28, The Texas Co. posted same prices on Grades A and B Gulf Coast crude as Humble.

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland, Refugio county, and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F. Saybolt.
Sulfur: not over .4%.

Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

Crude Price Changes

OIL CITY.—On Nov. 12 Joseph Seep Purchasing Agency reduced all Pennsylvania grade crude 15 cents per barrel. Last previous change was a cut of 15 cents on Nov. 1.

On the same date the Tide Water Pipe Co., Ltd., reduced Bradford-Allegany district crude 15 cents, making new $2.15 per barrel.

New prices of other Pennsylvania grade crude are: in National Transit lines, $1.85; in Southwest Pennsylvania Pipe Line lines, $1.80; in Eureka lines, $1.75; and Macksburg, O., district crude in Buckeye lines, $1.45 per barrel.

CASPER.—On Nov. 1 Midwest Refining Co. reduced Osage, Wyo., crude 15 cents, making new price 85 cents per barrel.

Airport Equipment Installed

SPRINGFIELD, Mass.,—Since the regular weekly air passenger service has been inaugurated between New York, Rio de Janeiro and Buenos Aires, aeropits of the Gilbert & Barker Mfg. Co. have been installed at 44 ports-of-call along this trade route.

Previous to the installations, five men were engaged in each refueling operation, according to "The Vent," official publication of the Gilbert & Barker company. Now one man does the entire job.

At some of the supply stations the aeropits, gasoline storage tanks and hand pumping units, are installed on barges up to which the seaplanes taxi for fuel.

Where you and industry are identical—

Every successful business is constantly on the lookout to improve its machinery and methods.

You, as an individual, in order to progress must devote a reasonable part of your time to *improving your mind.*

Good books on various phases of the oil industry will improve your mind, and pay you big dividends.

OIL PRICE HANDBOOKS

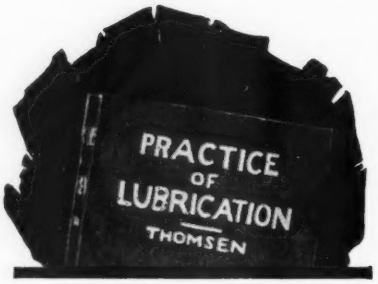
Have you a complete record of REFINERY prices; TANK WAGON markets; EXPORT prices; CRUDE prices—

For quick reference and comparison with today's prices?

The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9″ x 6″—146 pages.

Oil Price Handbook for 1929....$7.50
Oil Price Handbook for 1928.....$5
Oil Price Handbook for 1927.....$5
Oil Price Handbook for 1926.....$5
Oil Price Handbook for 1925 } $6
Oil Price Handbook for 1924 }

Send for these OIL PRICE HANDBOOKS *now*, before they are all gone.



How to select, how to apply, and how to use lubricants is thoroly discussed in "Practice of Lubrication," by T. C. Thomsen, consulting engineer.

The subject of lubrication is so intimately connected with the mechanical and operating conditions of engines or machinery; this book presents for each type of engine and class of machinery, the "technical background" necessary to determine the character of the oils required to give the best service.

It points out the conditions under which lubricants have to work for particular types of machinery and the influences to which they are subjected during use.

"Practice of Lubrication" is a thorough and exhaustive treatment of every phase of lubrication.

610 pages, 227 illustrations—$6.

LUBRICATING OIL SALESMAN'S PRIMER

The "Lubricating Oil Salesman's Primer" is a new book by Claude Ettele, associated with one of the big oil companies in this country. The author's purpose is "to properly present a first view of the subject of lubrication and encourage the young salesman to study advanced works without which he will be unable to develop maximum efficiency in the services of his employers and of his customers."

The book takes up the manufacture of various lubricating oils and greases; tests by which oil and grease specifications are written; general discussion of lubrication problems in cylinders, turbines, internal combustion engines; power transmission machinery such as shafting; wire ropes; belts, gears, bearings, etc., driven machines such as air compressors, pneumatic tools, ice machinery, machine tools, textile machinery, paper mills, mine and quarry machinery.

"Lubricating Oil Salesman's Primer" also gives a standard line of lubricants, and specifies which oils or greases are applicable to the various kinds of machinery. This book is well worth its price of $3. Send for your copy today!

Cut out and mail

NATIONAL PETROLEUM NEWS
Room 707, 1213 West 3rd St., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $.....
(Add 15 cents for foreign postage)

- ☐ Oil Price Handbook
- ☐ Practice of Lubrication—$6
- ☐ Lubricating Oil Salesman's Primer—$3

NAME .....

Address .....

.....

.....

Crude Oil Prices (in Effect Nov. 17, 1930)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Oct. 27, 1930)

Salt Creek 29-29.9	$0.69
" " 30-30.9	0.73
" " 31-31.9	0.77
" " 32-32.9	0.81
" " 33-33.9	0.85
" " 34-34.9	0.89
‡Salt Creek 35-35.9	$0.92
" " 36-36.9	0.95
" " 37 and above	0.98
Elk Basin	1.25
Grass Creek light	1.25
Big Muddy	1.00
Lance Creek	1.33
Rock Creek	1.01
Mule Creek	1.20
Rex Lake	1.10
Pondera	1.45
‡Osage	0.85
‡Cat Creek, Mont	1.25
Sunburst, Mont	1.55
‡Hogback, N. Mex	1.40
Artesia, N. Mex	0.75

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective Sept. 15, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Dominguez	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	‡Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Ventura Avenue (Associated Oil Co.)
14-14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	$0.55	$0.70	$0.70
15-15.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	....	.55	.70	.70
16-16.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	$1.65	.55	.70	.70
17-17.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	for	.55	.70	.70
18-18.9	.76	....		.76	.76	.71	.76	....	.55	.62	.62	.62	55°	.65	.75	.76
19-19.9	.82	....		.82	.82	.77	.82	....	.55	.70	.70	.70	gravity	.70	.80	.82
20-20.9	.88	....	F.o.b. ships	.88	.87	.83	.87	....	....	.78	.78	.78	and	.78	.85	.88
21-21.9	.94	....		.94	.93	.90	.93	$0.92	....	.86	.86	.86	over	.90	.90	.91
22-22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	....	.95	.97	.94
23-23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	....	1.02	1.05	1.00
24-24.9	1.12	1.12	....	1.12	....	1.08	1.08	1.05	....	1.06	1.04	1.04	....	1.08	1.07	1.05
25-25.9	1.17	1.17	....	1.17	....	1.11	1.12	1.09	....	1.10	1.06	1.06	....	1.11	1.09	1.10
26-26.9	1.22	1.22	....	1.22	....	1.15	1.16	1.13	....	1.14	1.08	1.08	....	1.15	1.12	1.15
27-27.9	1.26	1.27	....	1.26	....	1.19	1.21	1.18	....	1.18	1.11	1.10	....	....	1.16	1.19
28-28.9	1.30	1.32	....	1.30	....	1.23	1.25	1.23	....	1.23	1.15	....	....	....	1.20	1.23
29-29.9	1.34	1.37	....	†1.34	....	1.26	1.29	1.28	....	1.29	1.19	....	....	....	1.24	1.27
30-30.9	1.38	1.42	....	†1.38	....	1.29	1.33	1.33	....	1.35	1.23	....	....	....	1.29	1.31
31-31.9	1.43	1.47	....	....	....	....	....	1.38	....	1.41	1.27	....	....	....	1.34	1.36
32-32.9	1.48	1.52	....	....	....	....	....	1.43	....	1.47	1.31	....	....	....	1.40	1.41
33-33.9	....	1.57	....	....	....	....	....	1.48	....	1.53	1.35	....	....	....	1.46	1.47
34-34.9	....	1.62	1.32	....	....	....	....	1.53	....	††1.59	1.39	....	....	....	....	1.53
35-35.9	....	1.66	1.39	....	....	....	....	1.58	....	††1.65	1.43	....	....	....	....	1.59
36-36.9	....	1.72	1.46	....	....	....	....	1.63	....	....	....	....	....	....	....	....
37-37.9	....	1.78	1.53	....	....	....	....	1.68	....	....	....	....	....	....	....	....
38-38.9	....	1.84	1.60	....	....	....	....	1.73	....	....	....	....	....	....	....	....
39-39.9	....	1.90	1.66	....	....	....	....	1.78	....	....	....	....	....	....	....	....
40-40.9	....	1.96	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	2.02	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	2.08	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased.
‡Union Oil Co.'s prices on Kettleman Hills crude are, effective Sept. 15: 35-39.5, $1.10; 40-44.9, $1.20; 45-49.9, $1.35; 50-54.9, $1.50; and 55 and above $1.65.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Nov. 17	Nov. 10
Soda Ash light 58% bags, cwt.	$1.32–1.55	$1.32–1.55
Silicate of Soda 60 deg. drums, cwt.	$1.75–1.90	$1.75–1.90
Silicate of Soda 40 deg. tank cars, cwt.	$0.80	$0.80
Silicate of Soda 40 deg. drums cwt.	$1.05	$1.05
Sal Soda wks.	$0.90-1.10	$0.90-1.10
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	11.00-12.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks., lb.	2.40-2.45	2.40-2.45

Compounders' Supplies

	Nov. 17	Nov. 10
Vegetable Oils		
Linseed carloads, spot, lb.	9.40	9.20
Tanks, spot	8.80	8.60
Soya Bean, Tank, coast, lb.	8.00–9.00	8.00–9.00
Oleic Acid		
Distilled, tanks, lb.	8.00	8.00
Distilled, bbls., lb.	8.875	8.875
Saponified, tanks, lb.	8.50	8.50
Saponified, bbls., lb.	9.375	9.375
Lard Oils		
Prime Winter Strained, lb.	13.75	13.75
Extra Winter Strained, lb.	10.75	10.75
Extra, lb.	10.25	10.25
Extra No. 1, lb.	10.00	10.00
No. 1, lb.	9.25	9.25
No. 2, lb.	9.00	9.00
Tallow oil, lb.	8.75	8.75
Neatsfoot Oil		
Pure, bbls., lb.	11.50	11.50
Extra, bbls., lb.	10.25	10.25
No. 1 bbls., lb.	9.75	9.75
Cold Pressed, lb.	15.50	15.50
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	41–43	45–47
Light Pressed, tank cars, N. Y., gal.	35–37	39–42
Yellow bleached, gal.	38-41	42–45
Whale, extra winter bleached, gal.	80	85
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	41.50-42.50	41.50-42.50
Steam distilled turpentine, Savannah, gal.	36	36.50
Gum turpentine, N. Y., gal.	45	45
Gum turpentine, f.o.b. cars Savannah, gal.	38.75	38.75
Wood Rosin, N. Y., gal.	$5.15	$5.15
Wood Rosin F, Savn'h, bbl.	$4.66	$4.66
Gum Rosin B, N. Y. bbl.	$5.35	$5.45
Gum Rosin B, f. o. b. cars Savannah, bbl.	$4.20	$4.20
Rosin oil, pure, gal.	56	56
Rosin oil, compounded, gal.	50	50
Pine Tar		
Kiln burnt, bbl.	$13.00-14.00	$13.00-14.00
Retort, bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	46–48	46–48

Oil Stocks and Finances

Prairie-Sinclair Merger Talk Brought To End in Chicago

CHICAGO, Nov. 15

A DEFINITE end to the long negotiations between the Sinclair Consolidated Oil Corp. and the Prairie Oil & Gas Co. and Prairie Pipe Line Co. was pronounced during the American Petroleum Institute meeting by both H. F. Sinclair and W. S. Fitzpatrick, the latter chairman of the board of the Prairie Oil & Gas Co.

More than one and one-half years ago the report became public that the two companies were looking to consolidation. Later it was stated on several occasions by Mr. Sinclair that the two organizations were working in that direction. With the recent sales by the Sinclair of its half interest in the trunk pipeline system and the crude oil purchasing company to the Standard Oil Co. of Indiana, which had owned the other half for years, it was thought that the merger was near at hand.

After much conferring in recent weeks by executives of the two companies, it was finally admitted by both parties that agreement on terms was impossible.

While it has not been admitted by Sinclair interests that it will construct a new pipeline system, that is practically certain to be done. After the sale of the interest to the Indiana company, which left Sinclair without pipeline service of its own, a 12-inch line was started from Oklahoma City to Tyro, Kans. This town is a short distance west of Coffeyville, where Sinclair has a refinery.

At Tyro the company bought 600 acres in fee for tank farm site and it has erected 28 tanks of 80,000-barrels capacity each in the Oklahoma City field. Since the sale of its pipe line interest it has been served with crude oil to its Coffeyville, Kansas City and Chicago refineries by the Stanolind Pipe Line Co., successor to the Sinclair Pipe Line Co.

In recent months the Prairie Oil & Gas Co.'s sales of crude oil to refiners have fallen, the general decline in business and the diversion of some of it to new lines built by former Prairie customers being responsible. Mr. Fitzpatrick indicated in Chicago after the deal with Sinclair had failed of consummation, that the Prairie would proceed to strengthen its position as refiner and marketer.

Through its subsidiary, Producers & Refiners Corp., it operates a refinery at Tulsa, and another at Parco, Wyo. Mr. Fitzpatrick said the company was not yet ready to indicate along what lines it would proceed in its further integration and that there was no rush about it, but that within a few weeks an announcement might be made.

Protective Committees For Cosden Stock

NEW YORK, Nov. 15.—Two groups of stockholders of Cosden Oil Co. have formed protective committees.

A committee for preferred stockholders consists of George R. Baker, vice-president, Chatham Phenix National Bank & Trust Co.; Harry M. Blair, president, Associated Bond & Share Corp., and Charles Weston, vice-president, Atlantic National Bank of Boston.

A committee for common stockholders consists of Richard L. Morris, F. B. Keech & Co.; Charles S. Hirsch, Hirsch, Lilienthal & Co., and R. R. Young.

The Chatham Phenix bank, New York, has been designated as depository for the preferred stock and the Bankers Trust Co., also at New York, for the common stock.

Gasoline Tax Proposed In Great Britain

LONDON, Nov. 17.—Speaking at the recent annual dinner of the Society of Motor Manufacturers and Traders in London, Herbert Morrison, British Minister of Transport, intimated that the door was yet wide open to suggestions for the reform of motor taxation. As a result of his speech an interesting suggestion has been put forward which might overcome the present difficulty.

Why not, it is argued, apply the horse-power tax to commercial vehicles and let them have their gasoline free of duty, and tax the private car owner on the amount of gasoline he consumes, plus a purely nominal car tax. At present all automotive vehicles in Britain are taxed according to their horsepower rating.

The new proposal does away with the argument that a gasoline tax would bear unfairly on the commercial vehicle and gives the private owner the benefit of what seems to be the only equitable method of taxing him. Obviously, the main difficulty would be to ensure that only taxed gasoline was used by private owners, and that they did not acquire supplies on a large scale from friends owning trucks.

If that problem can be surmounted the plan seems to be thoroughly feasible and if put into operation it would mean that bigger cars would be sold and used in Britain instead of the many "baby" models now used to evade a high horsepower tax. There could hardly be a greater deterrent to buying an auto than the knowledge that if a 10 or 12 horsepower model is selected the buyer is promptly faced with an outlay of £20 or £24 ($100 or $120) for horsepower tax, whether the car runs 100 miles or 10,000 miles in the year.

By creating a demand for larger cars, therefore, the gasoline tax would be responsible for increasing gasoline consumption in Britain.

Service Stations Opened In India Cities

WASHINGTON—The first, architecturally speaking, "all-American" service station has been opened in Calcutta, India, according to the Automotive Division, Department of Commerce. Business was beyond expectation of the American oil company which operates it, reports said.

Four additional stations are being built in Calcutta, four in Bombay, two in Madras and one will be built at Delhi, while in Ceylon, some 40 stations will be built, it is reported.

The stations are of brick and stucco, equipped with steel casements and door frames. The only variation from the American station is the flat interlocking roof of red tile and mineral composition shingles which are used alternately.

Attendants wear white uniforms and are trained to give efficient service. Gasoline and motor oil are handled, and air and water service is given.

Dual hand-operated visible gasoline pumps and portable oil tanks and measuring pumps constitute the main dispensing equipment.

Inspection Fees Cut

MADISON, Wis.—State inspection fees on petroleum products in Wisconsin were reduced Nov. 1 from two and a half cents to two cents a barrel.

The reduction was the second to be announced since the fees were established. The first cut was made in August, 1929, and lowered the fee from three cents to two and a half cents.

Nationally Advertised

• • •

Nationally Accepted

Build your business on our reputation for satisfactory petroleum products

Empire Oil & Refining Company

Subsidiary Cities Service Co.

GENERAL SALES OFFICES—TULSA, OKLA.

NEW YORK PHILADELPHIA CLEVELAND CHICAGO ST. PAUL
KANSAS CITY ST. LOUIS FT. WORTH TORONTO

Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ending Nov. 15 Sales	First	High	Low	Last	Change
42⅜	17½	42¼	20½	922,075	N.P.	Amerada Corp.	50cQ	July 31, 30	8,800	21¾	22	20¼	22	0
64¾	12½	37	8¼	209,180	N.P.	American Republics Corp.	....	.....	2,900	10⅛	12¼	10	11¼	+ ¾
47¼	34½	51	30⅞	2,240,000	$25	Associated Oil	50cQ	Sept. 30, 30	10	35	35	35	35	0
77⅞	30	51⅜	18⅝	2,683,868	25	Atlantic Refining Co.	‡25cQ	June 16, 30	54,700	19	23¾	†18⅝	23	+ 4
49⅛	20	34	12⅝	2,257,108	25	Barnsdall Corp. A	50cQ	Aug. 6, 30	48,600	14⅛	14⅞	†12⅝	14¾	+ ⅝
34½	25	35	22	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	10	22	22	22	22	0
32⅞	12½	20⅜	9¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	3,200	9½	10	†9¼	10	+ ⅛
37⅜	18	30½	10	4,610,258	N.P.	Continental Oil (Delaware)	....	.....	37,500	11	12⅞	†10	12⅞	+ 1⅝
94¾	42¼	71⅛	28⅛	410,857	$100	General Asphalt Co.	$1Q	Sept. 15, 30	4,100	29¼	31⅛	†28⅛	31	— 3
109	26	116⅞	33⅛	250,000	100	Houston Oil	....	.....	22,600	36¾	44¾	†33⅛	43	+ 8¼
..	..	10¼	7⅜	.....	....	Houston Oil, new	....	.....	21,500	8¼	*10¼	†7⅜	10¼	+ 2⅛
39⅜	17¾	32	11⅛	1,379,295	N.P.	Independent Oil & Gas	37½c	Oct. 2, 30	17,400	13	16	†11⅛	16	+ 2⅝
53	13⅛	28⅜	3¼	699,066	10	Indian Refining	....	Dec. 15, 20	98,600	4⅛	4⅛	3⅝	4⅛	0
51¼	11½	27¾	8⅛	568,816	10	do certificates	....	.....	.....	....	....	....	....	.....
38⅜	16½	29½	21¼	3,994,150	N.P.	Lago Oil & Transport	....	Aug. 2, 27	.....	....	....	....	....	.....
18	7	12	4¾	1,187,701	N.P.	Louisiana Oil Refining	....	.....	1,400	5¼	5¼	†4¾	5¼	0
100¼	80	89½	78⅜	40,000	$100	do pfd.	$1.62½Q	Aug. 15, 30	.....	....	....	....	....	.....
18½	5⅞	10⅜	2	330,000	N.P.	Maracaibo Oil Exploration	....	.....	800	2½	2⅝	2⅛	2⅝	+ ½
295	176	182	150	459,428	$100	Mexican Petroleum	$3Q	July 31, 30	.....	....	....	....	....	.....
105	102	..	..	120,000	100	do pfd.	$2Q	July 31, 30	.....	....	....	....	....	.....
69⅝	9¼	37	9¾	1,244,383	N.P.	Mexican Seaboard Oil	....	Oct. 15, 24	89,500	11⅝	13¾	†9¾	13⅜	+ 1¾
39⅞	22⅛	33	15½	1,899,138	N.P.	Mid-Continent Petroleum	50cQ	Aug. 1, 30	25,900	17	18¼	†15½	18	+ 1
3⅝	¾	2½	¾	908,171	N.P.	Middle States Oil ctfs.	....	.....	.....	....	....	....	....	.....
..	..	32	16⅛	6,708,086	N.P.	Ohio Oil Co.	50cQ	Sept. 15, 30	64,000	18¼	20½	†16⅛	20	+ 1½
69	40¼	64¼	42	1,000,000	$50	Pan American Petrol. & Trans.	....	Oct. 20, 27	600	44½	44½	†42	43¼	— 2½
69¼	40½	67½	41	2,422,221	50	do B	....	Oct. 20, 27	2,500	44½	44½	†41	44	— 1
15¼	3	12¾	2⅛	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	800	2½	2¾	2½	2¾	— ⅛
76	47⅛	80	47½	25,666	$100	do pfd.	....	July 2, 23	.....	....	....	....	....	.....
..	..	27⅛	10	2,937,900	N.P.	Petroleum Corp. of America	37½cQ	Sept. 30, 30	33,900	11	11½	†10	10¾	— ⅜
47	24¼	44¾	16⅜	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	Oct. 2, 30	90,100	16⅞	20⅜	†16⅜	20⅜	0
3⅛	1	2½	¾	1,184,917	$25	Pierce Oil Corp.	....	.....	4,500	¾	¾	⅝	¾	0
51½	20	52	9¾	150,000	100	do pfd.	....	Feb. 1, 22	1,800	12⅛	14⅞	†9¾	14¾	— ½
5⅛	½	7⅛	2¼	2,500,000	N.P.	Pierce Petroleum Corp.	....	.....	12,200	2½	2¾	2¼	2¾	+ ⅛
65⅝	40½	54	18½	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	Sept. 30, 30	12,500	21	22	†18½	21¾	+ ¾
65	45	60	24⅜	4,050,000	25	Prairie Pipe Line Co.	‡75cQ	Sept. 30, 30	28,700	27	31⅜	†24⅜	31¼	+ 4¼
25⅛	4	31	3	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 30	800	4	4	†3	3½	— ⅛
46⅜	25⅛	38	16	56,907	50	do pfd.	....	May 4, 25	70	18½	18½	†16	16	— 3¾
30¾	20	27⅛	10¾	3,038,370	25	Pure Oil Co.	37½cQ	Sept. 1, 30	33,100	11½	11½	10¾	11½	+ ¼
116	108	114¼	93½	130,000	100	do 8% pfd.	$2Q	Oct. 1, 30	350	98	100	†93½	95⅞	— 4⅜
49⅛	22⅜	28¼	5⅞	2,891,735	25	Richfield Oil (California)	50cQ	Sept. 1, 30	66,900	6¼	6⅜	†5⅞	6⅛	— ⅛
42½	15	25¾	7	1,235,270	N.P.	Rio Grande Oil Co.	50cQ	July 25, 30	14,400	7⅛	8⅝	†7	8½	+ ⅝
64	43⅛	56½	38⅜	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.875	Aug. 13, 30	56,800	40¾	41⅝	†38⅜	41⅜	— 1⅞
55⅛	43⅜	48⅜	35⅝	77,492	L2	Shell Trans. & Trading	$1.453	July 28, 30	30	35⅝	35⅝	†35⅝	35⅝	— 2½
31¾	19	25½	7½	13,069,076	N.P.	Shell Union Oil Corp	35cQ	June 30, 30	30,300	9	9⅛	†7½	8⅝	— ½
..	..	106¼	69	400,000	100	do pfd.	$1.37½Q	Oct. 1, 30	2,000	70¼	71	69	69	— 3¼
40¼	15	37	7	869,255	10	Simms Petroleum Co.	40cQ	June 14, 30	6,200	7½	10¾	†7	9¾	+ 1⅞
45	21	32	11⅜	5,455,665	N.P.	Sinclair Consolidated Oil Corp.	50cQ	July 15, 30	97,800	12⅛	14	†11⅜	13¾	+ 1¼
111	103	112¼	106½	154,685	100	do pfd.	$2Q	Aug. 15, 30	200	107¾	107¾	107¾	107¾	0
46½	42	42	10¼	1,097,650	$25	Skelly Oil Co.	50cQ	Sept. 15, 30	9,900	11⅛	15½	11⅛	15⅝	+ 5⅝
..	..	99¾	62	120,000	100	do pfd.	$1.50Q	Aug. 1, 30	800	68½	68½	†62	62	— 7
..	..	106	98	750,000	100	S. O. Export Corp. pfd.	$2.50S.A.	June 30, 30	1,600	104½	104½	103½	104¼	+ ¼
81⅛	51½	75	49½	13,016,434	N.P.	S. O. California	62½cQ	Sept. 15, 30	61,300	50½	52¼	†49¼	51	+ ⅞
..	..	49	17⅞	320,000	$25	S. O. Kansas	50cQ	Sept. 15, 30	7,200	19¼	21½	†17⅞	17½	+ 2½
83	48	84⅛	49	25,443,643	25	S. O. New Jersey	‡25cQ	Sept. 15, 30	337,300	50¾	54⅞	†49	54⅝	+ 4¼
48¼	31¼	40⅜	25	17,809,530	25	S. O. New York	40cQ	Sept. 15, 30	57,000	25⅜	26¼	†25	26¼	+ ½
86⅜	55	70	49⅝	1,416,911	N.P.	Sun Oil Co.	25cQ	Sept. 15, 30	4,100	50¼	51	†49⅝	51	+ 1
105½	100	107¾	102½	100,000	$100	do pfd.	$1.50Q	Sept. 1, 30	470	105⅞	105⅞	104½	105	0
24	5¼	9½	1¼	1,026,979	N.P.	Superior Oil Corp.	....	.....	2,100	1½	1¾	1⅛	1⅜	+ ⅛
71⅞	50	60⅛	35	9,850,724	$25	The Texas Corp.	75cQ	Oct. 1, 30	65,000	37⅝	39⅛	†35	38½	+ ⅛
23⅞	9⅛	14½	5⅛	929,947	10	Texas Pacific Coal & Oil	a2½%	Dec. 31, 29	6,200	5⅞	6¼	5½	6¼	+ ¾
23½	10	17¾	8	5,881,980	N.P.	Tide Water Associated Oil	30cS.A.	Aug. 15, 30	42,000	8¾	9	†8	9	0
90⅞	74⅛	89¾	69¾	732,550	$100	do pfd.	$1.50Q	Oct. 1, 30	1,500	70	70	†69¾	70	0
40	14	31	15⅛	2,191,820	N.P.	Tide Water Oil Co.	20cQ	Sept. 30, 30	.....	....	....	....	....	.....
97½	85⅛	94⅛	82	199,443	$100	do pfd.	$1.25Q	Aug. 15, 30	300	82	82	82	82	0
..	..	24	12⅜	3,339,150	N.P.	Transcontinental Oil	30c	May 1, 30	.....	....	....	....	....	.....
57	42⅜	50	27⅜	2,201,008	$25	Union Oil Co. (California)	‡50cQ	Aug. 9, 30	13,800	27⅛	28	25⅛	27¾	+ ¼
..	..	38½	24	1,254,048	N.P.	Union Tank Car Co.	40cQ	June 2, 30	.....	....	....	....	....	.....
42⅞	15	27	6¼	777,603	N.P.	Warner Quinlan Co.	25cQ	July 3, 30	9,500	6½	6⅝	†6¼	6⅜	— ⅛
38	25	29½	26	490,000	N.P.	White Eagle Oil & Refg.	50cQ	Apr. 20, 30	.....	....	....	....	....	.....
29¾	12⅛	21	9	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	1,500	9½	9½	†9	9½	0

*New high †New low ‡Also extra s-Stock

Total sales 1,619,640

Pittsburgh Stock Exchange

Transactions Week Ended Nov. 14, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas	828	7¾	7½	7½	— ¼
Devonian Oil	252	7½	7	7	— ½
Lone Star Gas	34,848	24¾	20⅛	24⅝	+1⅜
do pfd	300	105½	*105	105	—1
Plymouth Oil	600	19½	*19	19	—1
Shamrock O. & G.	2,025	10½	10	10¼	— ¾

*New low.

Pittsburgh Curb Market

Transactions Week Ended Nov. 14, 1930

	Sales	High	Low	Last	Change
Arkansas Gas A	500	5½	4¼	5½	—1½

Acme Engineering Co., 1227 20th Ave., Oakland, Cal., is marketing its Arco automatic tire gauge for tire inflation at service stations or garages. It is made of hard aluminum alloy with a hard rubber coated pistol grip. It is easy to operate and performs quickly, the company says.

Among its features are an unbreakable glass window over the dial with figures and graduations in white on a black dial. A large green pointer indicates the registered pressure.

Pressure is registered as soon as the chuck is placed on the valve stem and the new reading registered each time the trigger is released. All air passages have been made as large as possible to reduce air resistance in passing through the gauge. Other features include accuracy, durability and simplicity of handling.

* * *

Pittsburgh Equitable Meter Co., Pittsburgh, has published a set of multiplier tables, the factors of which are used to correct volumes at higher pressures to volumes at a given base pressure. Multipliers are based on Boyle's law. Pages are punched to fit into the standard Lefax or similar binder.

Oil Company Earnings

Nine-Month Earnings

Company	1930	1929
Louisiana Oil Refining	†$77,188	†$1,526,887
Mexican Seaboard	679,529	.....
Panhandle P. & R.	*247,972	129,874
Sunray Oil	606,659	.....
Valvoline Oil	246,194	.....

*Loss. †Before income tax.

Third Quarter Earnings

Company	1930	1929
Louisiana Oil Refg.	†$29,378	†$783,613
Mexican Seaboard	113,863	141,291
Panhandle P. & R.	*211,430	30,417
Sunray Oil	952,950	.....

*Loss. †Before income tax.

Six-Month Earnings

6 mo. ended Sept. 30	1930	1929
Gilmore Oil	$428,595	$349,686

N. P. N. Service Record

Some of the requests for information, data and advice, which were taken care of in various National Petroleum News offices in the past week are:

Pump manufacturer given estimate of number of service stations in the country, number of automobiles per station and number of oil company owned drive-in stations.

* * *

Pennsylvania oil jobber referred to 28 manufacturers of bulk station and compounding plant equipment; also to seven Mid-Continent makers of lubricating oils and three Pennsylvania makers.

* * *

New York oil jobber furnished names and addresses of six makers of hand suction pumps for removing oil from bottom of empty drums.

* * *

Examiner of Louisiana clearing house furnished data on standing of two major oil companies.

* * *

Michigan compounder given names and addresses of Gulf Coastal lubricant manufacturers and sources of supply.

* * *

South Dakota inquirer furnished data on a Texas production company.

* * *

Large Texas refiner furnished with corporate changes in southwestern refining company.

* * *

Oklahoma producer-refiner-marketer told about possibility of increasing terminal business through Texas city facilities.

* * *

Secretary of southwestern producers' association called at Houston office to discuss conditions in the industry.

* * *

Delaware inquirer furnished name and address of motor oil manufacturer.

* * *

New Mexico service station operator told where he can buy monogrammed overalls and shirts for attendants.

* * *

Michigan refiner told of court decision on exclusive rights of oil company to combination of color and design in pump and station decorations.

* * *

Massachusetts oil distributor furnished comparative prices on gasoline at New York and Boston.

* * *

North Dakota attorney furnished information on lease royalties and forms.

* * *

Baltimore inquirer referred to books on gasoline.

* * *

Major oil company telegraphed source at which monthly Ethyl gasoline blending figures are available.

* * *

Illinois station operator referred to N.P.N. articles on service station and lunch room layouts and furnished names and addresses of six manufacturers of station buildings.

* * *

Advertisers association in New York told where gasoline sales by companies, states and months are available, and referred to N.P.N. articles giving them for three states.

Texas property owner told where to obtain oil and gas maps of the U. S.

* * *

Employe of major refiner given explanation of "clay filtered" and "acid treated" oil, referred to N.P.N. articles on lube oil manufacture, and to books published on the subject.

* * *

New York oil distributor referred to sources who can tell him what refiners are making paraffin base zero cold test lube oils.

* * *

New York designing engineer told where charts may be obtained showing origin, refining and consumption of crude oil.

* * *

Colorado oil jobber referred to 10 refiners of Pennsylvania bright stock and neutrals.

* * *

Montana oil man told from whom he may rent a tankcar for storing gasoline.

Aviation Gasoline Prices

(Continued from page 93)

aviation gasoline, exemption being claimed at time of purchase.

†Price at Washington is on Stanavo Aviation gasoline which sells at a ½c premium over "Standard" aviation gasoline.

COLONIAL BEACON OIL CO.

	T.W.	Tax	T.W.
New York City	17.5	2	19.5
Boston	21	2	23

S. O. PENNSYLVANIA

Philadelphia, Pa.	19	3	22
Pittsburgh, Pa.	19	3	22
Altoona, Pa.	19	3	22

S. O. OHIO

Thru Ohio	16	4	20

Discounts given by S. O. Ohio: For airport delivery only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c; 24,000 gals. and over per month, 4c.

S. O. INDIANA

Chicago	17	3	20
Indianapolis, Ind.	17.2	4	21.2
Detroit, Mich.	17.8	3	20.8
Milwaukee, Wis.	17.1	2	19.1
Minneapolis, Minn.	18.2	3	21.2
St. Louis, Mo.	16.4	2½	18.9
Kansas City, Mo.	16.9	3	19.9
Fargo, N. D.	19.9	3	22.9
Huron, S. D.	18.3	4	22.3
Wichita, Kan.	15.8	3	18.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. St. Louis tax of 2½c includes ½c city tax and Kansas City tax includes 1c city tax.

S. O. LOUISIANA

New Orleans, La.	18	5	23
Nashville, Tenn.	20	5	25
Memphis, Tenn.	19	5	24

2c per gal. discount off above t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	16.25	4	20.25

2c per gal. refund to resellers.

CONTINENTAL OIL CO.

*Denver, Col.	15	4	19
Cheyenne, Wyo.	17	4	21
Helena, Mont.	23.5	5	28.5
Salt Lake City, Utah	19.5	3.5	23
†Albuquerque, N. M.	15	5	20
Boise, Ida.	21.5	5	26.5

*1c per gal. discount to dealers at Denver. †2c per gal. discount to dealers at Albuquerque.

S. O. CALIFORNIA

Phoenix, Ariz.	17.5	4	21.5
Los Angeles, Cal.	16.5	3	19.5
San Francisco, Cal.	17	3	20
Reno, Nev.	21	4	25
Portland, Ore.	17.5	4	21.5
Seattle, Wash.	17.5	3	20.5
Spokane, Wash.	21.5	3	24.5

Note: 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

EXPORT EXECUTIVE—Linguist, technically trained, with many years experience, can fill position here or abroad. Has been actively engaged in most European countries including Russia. Fifteen years with last firm. Available January 1st. Address M. J. K., 2222 Carbide and Carbon Bldg., Chicago, Ill.

SUPERINTENDENT-COLLEGE GRADUATE, 12 years experience operating modern refineries on all types crudes. Have personally operated all types modern equipment. Considerable experience with vapor phase cracking and development of special processes. Address Box 613.

Situations Open

PROMINENT EASTERN REFINERY requires the services of graduate mechanical engineer with at least five years' experience in the design, construction, maintenance, and operation of refinery equipment, steam and refrigerating plants. State age, education, experience and salary expected. Address Box 612.

Business Opportunities

STATION PROPERTIES BOUGHT AND SOLD

Send full detail

Rome E. Goodwin
Room 23-2313 Madison
Toledo, Ohio

WANTED—Capable oil salesmen as stockholders in reorganizing company. Men now earning four or five thousand should double amount by investing present yearly earnings. Products without competition. E. H. Jayne, Webster, N. Y.

PETROLEUM PRODUCTS BOUGHT ON COMMISSION

Make this office your Tulsa buying office on a commission basis.

Let's Exchange References

DALE W. MOORE

405 Philtower Bldg., Tulsa, Okla.
Telephones: 3-4177 and 3-4178
L. D. 136

Patent Attorneys

ROYAL E. BURNHAM
Attorney-At-Law

Patent and Trade-Mark Practice Exclusively

Continental Trust Building
Washington, D. C.

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Week Ended Nov. 15 Sales	First	High	Low	Last	Net Change
18¾	13½	18½	12¼	.....	£1	Anglo-Amer. Oil voting stk. ctfs..	36c	June 5, 29	.....	.....	.....	.....	.....	.....
17⅛	11	19	12	.....	£1	do non-voting stk. ctfs.....	36c	June 5, 29	.....	.....	.....	.....	.....	.....
2½	¾	1	⅜	500,000	N.P.	Atlantic Lobos Oil.....	....	.....	.....	.....	.....	.....	.....	.....
4⅛	1	1½	¼	200,000	$50	do pfd.....	....	.....	.....	.....	.....	.....	.....	.....
46½	25	25	11¾	40,000	25	Borne Scrymser Co.....	$1S.A.	Apr. 15, 30	.....	.....	.....	.....	.....	.....
74¼	55	69	45	200,000	50	Buckeye Pipe Line Co.....	$1Q	Sept. 15, 30	700	45⅛	45⅛	†45	45	— 4
210	130	184⅞	100¼	120,000	25	Chesebrough Mfg. Co.....	‡$1Q	Sept. 30, 30	300	105	105	†100¼	100¼	—18
11¾	5⅝	7⅝	3⅜	.....	N.P.	Creole Petroleum Co.....	....	.....	25,700	3⅞	4	†3⅝	3¾	— ⅛
75¾	40	65¾	25	30,000	$50	Cumberland Pipe Line Co.....	$1Q	June 16, 30	.....	.....	.....	.....	.....	.....
70½	42	54¾	31¾	50,000	100	Eureka Pipe Line Co.....	$1Q	Aug. 1, 30	50	32	32	32	32	+ ¼
...	...	6¾	2½	280,000	N.P	Galena Oil Corp. w.i.....	....	.....	.....	.....	.....	.....	.....	.....
...	...	37¼	26	.....	N.P.	General Petroleum Corp. w.i.....	....?	.....	.....	.....	.....	.....	.....	.....
128	74⅛	119	69¼	2,974,645	$25	Humble Oil & Refg. Co.....	50cQ	Oct. 1, 30	100	26	26	26	26	0
41	22	30	15⅜	26,490,741	N.P.	Imperial Oil, Ltd.....	12½cQ	June 2, 30	29,400	71⅛	72	†69¼	72	+ 1
42⅛	26	41	21¾	300,000	$10	Indiana Pipe Line Co.....	‡50cQ	Aug. 15, 30	21,800	16¾	18⅜	16	18⅜	+ 1⅜
29⅜	15	24	13⅜	14,247,880	N.P.	International Petroleum Co.....	25c	June 16, 30	1,200	23	23¾	†21¾	23¾	— ⅛
25⅞	10½	22⅜	13	509,000	$12½	National Transit Co.....	25cQ	June 16, 30	26,100	14¼	14½	†13⅜	14¼	0
17¾	10	21	10⅛	100,000	10	New York Transit Co.....	40cQ	July 15, 30	900	13	13½	†13	13½	— ⅜
63	41	54	30⅜	40,000	50	Northern Pipe Line Co.....	$2S.A.	July 1, 30	.....	.....	.....	.....	.....	.....
105½	103¾	108	103	600,000	100	Ohio Oil pfd.....	$1.50Q	June 14, 30	100	31	31	31	31	0
44½	18⅝	32	15¾	400,000	25	Penn Mex. Fuel Co.....	$1	May 20, 30	900	105	105	103⅛	103⅛	— 2⅛
50	29	33	7¾	160,000	25	Solar Refining Co.....	$1.25S.A.	Dec. 20, 29	200	15¾	17	†15¾	16⅛	— ⅞
23½	13	20⅛	9	100,000	10	Southern Pipe Line Co.....	$5	Sept. 2, 30	.....	.....	.....	.....	.....	.....
60¼	35⅛	45⅞	22	1,200,000	25	South Penn Oil Co.....	50cQ	Sept. 30, 30	100	9⅝	9⅝	9⅝	9⅝	— ⅜
70	45	64	39	35,000	50	Southwest Pa. Pipe Lines.....	$1Q	Oct. 1, 30	4,500	24⅞	25⅛	†22	24⅛	— ⅞
63	45	59⅞	35⅛	16,850,587	25	S. O. Indiana.....	62½cQ	June 16, 30	.....	.....	.....	.....	.....	.....
46⅞	29	40½	20⅛	2,577,124	10	S. O. Kentucky.....	40cQ	June 30, 30	68,800	38⅛	38⅞	†35⅛	37⅞	— ⅜
50¼	40	48⅞	35¼	188,159	25	S. O. Nebraska.....	‡62½cQ	June 20, 30	14,700	22¼	24⅝	†20¼	24⅝	+ 1⅞
129	60	108½	50⅛	560,000	25	S. O. Ohio.....	62½cQ	Oct. 1, 30	300	36	36¾	†35¼	36¾	— 2¼
...	...	...	...	120,000	100	do 5% pfd.....	.....	.....	2,350	55	56	†50⅛	56	+ 1
124½	113½	122	115¼	70,000	100	do 7% pfd.....	$1.75Q	Sept. 2, 30	1,500	103	103	103	103	— ⅜
18	5⅜	10	4	34,158	25	Swan Finch Oil Corp.....	....	Jan. 15, 29	10	115¼	115½	115¼	115½	— ½
133¾	75⅛	97⅛	59⅛	5,139,887	25	Vacuum Oil Co.....	$1Q	June 20, 30	.....	.....	.....	.....	.....	.....
									19,200	61¾	65	59⅜	64⅞	+ 3¾

*New high †New low ‡Also extra

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Week Ended Nov. 15 Sales	First	High	Low	Last	Net Change
.72	⅛	⅜	1/32	$1	Amer. Contr. Oilfields	.....	.....	.....	.....	.....	.....
8⅝	1⅛	4½	⅞	5	Amer. Maracaibo.....	10,300	1	1¼	†⅝	⅞	— ⅛
4¾	1	1⅜	1⅛	10	Argo Oil.....	.....	.....	.....	.....	.....	.....
26	3¾	16¾	5⅛	N.P.	Arkansas Nat. Gas...	7,900	5⅝	7	5¾	7⅛	0
24¾	6½	16¾	4⅝	N.P.	do Class A.....	39,900	5⅝	7⅝	7½	7¼	+ 1¾
9	4	8⅛	7½	10	do pfd.....	800	7½	7⅝	7½	7⅝	+ ⅛
70	50	28½	15¼	N.P.	British American Oil..	.....	.....	.....	.....	.....	.....
4⅞	⅞	2¾	¾	¼	Carib Syndicate.....	4,300	1⅛	1¼	1	1	— ⅛
68½	20	44¼	16	N.P.	Cities Service.....	361,100	16⅛	21	16	21	+ 4
99¼	84	93⅞	52	100	do pfd.....	3,800	88⅞	90⅛	87⅛	90⅛	+ 1⅜
9¼	8	9	7½	10	do pref. B.....	300	7⅞	7⅞	†7½	7½	— ¼
96	81	89⅞	80	100	do pref. BB.....	.....	.....	.....	.....	.....	.....
1½	¼	1/32	1/32	1	Colombia Syndicate..	9,700	¼	¼	⅛	⅛	— 1/32
15	3⅞	8¼	2⅜	N.P.	Colon Oil Corp.....	3,900	2½	2¾	2⅜	2⅝	+ ⅛
...	...	21	5¾	N.P.	Columbia Oil & Gas..	1,900	7⅛	7⅞	6¼	7⅞	+ ¾
11⅜	2½	5⅞	2	10	Consolidated Royalty	1,300	2¾	2¾	2¾	2¾	0
135	42	74¾	1¾	N.P.	Coaden Oil Co.....	87,000	3	3⅜	†1¾	3⅜	+ ⅜
87	55	70	15½	100	do pfd.....	.....	.....	.....	.....	.....	.....
2½	¼	1	¼	N.P.	Crown Central Pet...	200	⅜	⅜	⅜	⅜	+ ⅛
11⅜	4	...	...	N.P.	Crystal Oil.....	.....	.....	.....	.....	.....	.....
51⅛	51⅛	...	...	100	do pfd.....	.....	.....	.....	.....	.....	.....
26	6½	13½	4¾	N.P.	Darby Petroleum.....	4,900	5¼	5⅞	†4¾	5⅞	+ ⅛
...	...	21¾	21½	N.P.	do new.....	.....	.....	.....	.....	.....	.....
11	2	11	4⅛	N.P.	Derby Oil & Refg.....	1,800	4½	4½	†4⅛	4½	— ½
44	17	60	30	N.P.	do pfd.....	.....	.....	.....	.....	.....	.....
...	...	12	12	10	Devonian Oil.....	.....	.....	.....	.....	.....	.....
209	115	166⅞	75	$25	Gulf Oil Corp.....	14,300	76	80	†75	80	+ 4
7½	1⅛	4	2¼	N.P.	Homaokla Oil.....	.....	.....	.....	.....	.....	.....
...	...	47½	17¼	N.P.	Indian Territory A...	5,800	18¼	20½	†17¼	20½	+ 2
...	...	53½	17	N.P.	do B.....	2,000	18	20⅝	†17	20⅝	+ 2
2⅞	⅛	1¾	⅜	10	Intercontinental Pet..	4,900	⅜	½	⅜	⅜	0
3⅝	1¼	3	1⅛	N.P.	Kirby Petroleum.....	100	1⅛	1⅛	1⅛	1⅛	— ⅛
6⅛	1	4¾	⅜	N.P.	Leonard Oil & Dev...	11,900	¾	⅞	¾	⅞	+ ⅛
38⅞	18	29	6¼	N.P.	Lion Oil Refg.....	3,700	8	9	7¼	9	+ 1⅛
67⅞	28	55⅞	20⅛	N.P.	Lone Star Gas.....	19,300	22⅛	25½	†20⅛	25½	+ 2¾
...	...	31	5½	$25	MacMillan Petrol....	.....	.....	.....	.....	.....	.....
2⅞	⅛	½	⅛	1	Magdalena Synd.....	.....	.....	.....	.....	.....	.....
38½	14	16	5	N.P.	Margay Oil.....	100	5	5	†5	5	— 1
6⅜	2¼	7½	1⅞	N.P.	Mexico Ohio Oil.....	400	2	2	2	2	+ ⅛
...	...	11⅞	2¼	N.P.	Middle States A v.t.c.	2,800	2⅝	3⅝	†2¼	3¼	+ ¼
...	...	6	1	N.P.	do Class B v.t.c...	900	1	1½	1	1½	+ ⅜
42	8	36¼	7⅝	5	Missouri-Kansas P.L.	9,900	9	9	7⅞	8½	— ¼
1½	¼	¾	⅜	1	Mountain & Gulf Oil..	.....	.....	.....	.....	.....	.....
22⅞	7	12⅛	5⅜	10	Mountain Producers..	3,800	6	6	†5⅜	5½	— ⅛
43⅞	24	41⅜	23⅜	N.P.	Nat. Fuel Gas.....	8,500	25⅝	26	†23⅜	25⅜	— ⅝
5	2¼	3½	1¾	$5	New Bradford Oil...	200	1⅞	2	†1¾	1¾	— ¼
4¾	3⅛	3⅛	2⅜	10	New England Fuel...	.....	.....	.....	.....	.....	.....
24½	11⅛	16⅞	4	25	N. Y. Pet. Royalty...	200	7¼	8⅛	7¼	8⅛	+ ⅛
18½	6⅛	11¼	3	N.P.	North Central Texas	1,100	3⅜	4¾	3¼	4	+ ⅞
19¼	8⅛	11⅝	5	N.P.	Oilstocks Ltd. A.....	1,400	5⅞	5⅞	†5	5½	0
18¾	8½	11½	5	N.P.	do B.....	4,500	5	5¼	†5	5¼	— ¾
26⅜	12⅛	19½	8¼	N.P.	Pacific Western Oil...	1,000	10	10	†8¼	9	— 1
3½	½	2½	¼	N.P.	Pandem Oil.....	500	1/32	1/32	¼	1/32	0
10½	2¼	4⅜	1¾	N.P.	Pantepec Oil.....	1,500	2	2	1¾	1¾	— ⅛
25½	13⅛	15	13⅛	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
28	17	29	19⅛	N.P.	Petroleum Corp.....	.....	.....	.....	.....	.....	.....
...	...	5⅞	1	....	do warrants.....	200	1	1⅛	1	1⅛	+ ⅛
37	22	27½	17⅞	N.P.	Plymouth Oil.....	1,500	19½	19⅜	†17⅞	19¾	+ ¼
16	9	10½	5	$5	Red Bank Oil.....	200	5½	5½	†5	5	— 1
8⅜	1⅛	5⅜	1⅜	N.P.	Reiter-Foster Oil....	1,200	1⅞	1⅞	†1⅜	1⅝	0
25¼	19	23½	9¾	25	Richfield Oil pfd....	600	13⅞	13⅞	13¾	13¾	0
29	13	25	2¼	N.P.	Root Refining pr. pfd.	300	3½	3½	†2¼	2¼	— 2¾
11	3	8⅝	2	N.P.	Ryan Consolidated...	.....	.....	.....	.....	.....	.....
5⅞	1⅞	2½	1⅜	10	Salt Creek Consol....	200	1½	1½	1½	1½	+ ⅛
25⅞	9	15¼	5¼	10	Salt Creek Producers.	800	6¼	7⅜	†5¼	7⅛	+ ¾
33⅛	10	8	5⅜	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
...	...	39⅛	39	25	Signal Oil & Gas A...	.....	.....	.....	.....	.....	.....
24	9	17	7	N.P.	Southland Royalty...	4,500	7¼	8⅜	7⅛	8⅜	+ 1
12	4	10	3½	5	Sunray Oil.....	6,200	3⅞	4	†3½	3⅞	0
23	7⅛	19½	8⅛	N.P.	Texon Oil & Land....	1,800	10	10	†8⅛	9⅞	— ⅜
81⅛	8⅞	16	8	10	Venezuela Mexico....	.....	.....	.....	.....	.....	.....
6½	1⅛	4⅛	1¼	5	Venezuela Petroleum.	1,000	1⅜	1½	1⅜	1½	0
9⅛	2	5	2	1	Woodley Petroleum..	1,600	2	2	2	2	— 1
5⅜	¼	2½	⅜	N.P.	Y Oil & Gas.....	100	½	½	½	½	+ ⅛

*New High †New Low

New York Bonds

Week Ending Nov. 14

	High	Low	Last	Change
Asso. Oil gold 6s.....	102¾	102¾	102¾	— ¼
Atlantic Refg. deb. 5s...	101½	101	101	—1
Cal. Pet. 5s.....	99¼	97	98½	+1¼
Cal. Pet. 5½s.....	100½	100	100½	+ ⅛
General Pet. 5s.....	102	101⅛	102	0
Humble Oil & Refg. 5s..	102	101½	101½	— ¼
Humble Oil & Refg. 5½s	102⅜	102¼	102½	0
Pan Amer. P & T 6s....	102⅝	102¼	102¼	— ¼
Pan Amer. P & T 6s....	79½	79	79	—1
Phillips Pet. 5½s.....	92½	92	92½	— ¼
Pierce Oil deb. 8s.....	106	106	106	0
Pure Oil 5½s.....	96⅞	96	96½	+ ¼
Pure Oil 5½s.....	95½	94½	95	0
Richfield Oil of Calif. 6s..	77⅞	72	77	—1½
Shell Union Oil 5s.....	89	85	86	—3⅛
Shell Union Oil 5s with war.....	89½	85½	86⅞	—3⅛
Sinclair Con. Oil 7s.....	102½	100¾	101	— ⅜
Sinclair Con. Oil 6½s...	101⅜	99½	99½	—2⅛
Sinclair Con. Crude 5½s.	101⅝	101½	101½	— ⅛
Sinclair Pipeline 5s.....	100¼	99¾	100	0
Skelly Oil 5½s.....	90¾	88	89	—1⅝
S. O. N. J. 5s.....	104½	103¾	104½	+ ⅜
S. O. N. Y. 4½s.....	100¾	99¾	100	0
Transcontinental Oil 6½s	109⅞	109¾	109⅞	0
Transcontinental Oil 6½s	100¼	99⅞	99⅞	— ⅜
Union Oil of Calif. 6s A..	106	105⅝	105⅝	— ⅜
Union Oil of Calif. 5s C..	100½	100⅜	100⅜	0
Union Oil of Calif. 5s war.	97¼	97	97	0
Warner-Quinlan 6s.....	52	50	50	— 3
White Eagle Oil 5½s....	102½	102½	102½	0

New York Curb Bonds

Week Ending Nov. 14

	High	Low	Last	Change
Beacon Oil 6s '36.....	98	97	97	—1
Cities Serv. 5s '66.....	82½	75⅝	82½	+1¾
Cities Serv. 5s '50.....	86¾	76⅜	86½	+8⅜
Cities Serv. G. 5½s '42..	88½	86¼	88½	+ ¼
Cities Serv. G. P. 6s '43..	93½	91¾	92¾	+ ¼
Cont. Oil 5½s '37.....	96½	96	96	— ½
Empire O & R 5½s '42..	87¾	85	87	+2
Gulf Oil 5s '37.....	101½	101	101	— ½
Gulf Oil 5s '47.....	101⅞	101½	101⅝	+ ⅜
Indep. Oil 6s '39.....	101	100½	100½	— ½
Sun Oil 5½s '39.....	102¾	101½	101½	0
Valvoline Oil 7s '37.....	99½	99½	99½	— ½

Oil Dividends

	Amount	Stock of Record	Payable
Hancock Oil q.....	25c	Dec. 1	Nov. 15
North Cent. Texas pfd q.	$1.62½	Jan. 2	Dec. 10
Paragon Refg. liquidating	$10	Nov. 20	.....
Royal Dutch interim....	10%	.....	.....
Shell Transport interim..	10%	.....	.....